FEB. -5 1924 LIBRARY TRADE MARK REG. U.S. PAT. OFFICE

Vel. 23, No. 4

Official Journal of ASSOCIATION OF ELECTRAGISTS-International

FEBRUARY, 1924



TODAY lighting is so great a factor in commerce that its intelligent use may spell the difference between success and failure.

A Tork Clock for turning electric lights on and off regularly interests every business man and makes him ready to bring his lighting up-to-date—because the proper *use* of lighting can now be automatic.

Get illustrations and prices of Tork Clocks from

TORK COMPANY 8 West Fortieth Street, New York City "The Best Gongs Money Can Buy"



Enclosed Type Faraday Signal Gongs

BATTERY AND D. C. CIRCUITS

FARADAY SIGNAL GONGS are the Standard of the world today! For important signal work they save far more than they cost, for they never fail!

> We call particular attention to the following important points of superiority:

"High-Power" Armature.-Patented "High-Power" armature allows the keeping of arma-ture in magnet field up to the moment of striking the gong—twice the power of any other mechanism made.





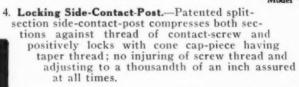


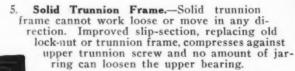
Model "C"



Model "AT'

- 2. Breakage of Springs Cannot Disable Bell.
 - 3. Insulated Mechanism .- Frame of bell carries no current at any time, as entire electrical mechanism is insulated from frame-casting. Bell may be mounted on metal without fear of grounding. All current-carrying terminals are mounted on Bakelite Pads.







"CW"





Model "CWT"

- Non-Turning Contact and Binding Posts.-Non-turning and non-loosening binding posts equipped with split steel lock-washers prevent connections from ever jarring loose.
 - Contact-Points.-Contact-points are of Platinoid or Platinum, as specified, and are al-ways plainly marked on both screw and spring. Platinoid contacts furnished, unless otherwise specified.

A. C. Transformer FARADAY Signal Gongs for operation on 18 Volt A. C. Bell-Ringing Transformer Circuits and 100 to 250 Volt A. C. Light and Power Circuits, 25-60 Cycle.

For Sale by All First-Class Electrical Jobbers Throughout the Country

Manufactured By

STANLEY & PATTERSON

250 West St., New York



The Electragist

(Trade Mark Reg. U. S. Pat. Omce.)

The Official Journal Published Monthly

By the Association of Electragists—International.

FARQUSON JOHNSON Editor and Business Manager

 R. F. PAIGE, Advertising Director. CLEVELAND OFFICE:
 H. W. Booth, 301 Ellastone Building. JAY S. TUTHILL Associate Editor

Volume 23

FEBRUARY, 1924

No. 4

TO OUR READERS

All matter for publication must be in the hands of the Editor by the 10th of the month preceding publication.

All changes in our mailing list should be received by us two weeks prior to date of publication of the issue with which the change is to take effect.

TO OUR ADVERTISERS

Changes in advertisements and all advertising copy should reach our office not later than the TENTH OF THE MONTH previous to the date of issue.

SUBSCRIPTION RATES

Copyright, 1924, by Association of Electragists-International.

Entered as second-class matter September 1, 1919, at the Post Office at Utica, New York, under the act of March 3, 1879.

PUBLICATION OFFICE:

100 Liberty Street,

Utica, N. Y.

EDITORIAL AND BUSINESS OFFICE:

15 West 37th Street, New York City

Table of Contents and Advertising Index Next to Last Page.



—is one of the features necessary to a perfect conduit. The flat circular weave—as of a coil spring—keeps the SAY-LORDUCT flexible in every way. The special finishing compound keeps it soft and pliable under all climatic conditions. It will not become brittle in cold weather or soft and sticky in warm weather.

THE firm, flat, springlike circular weave makes a smooth inside surface. The special covering compound is absolute assurance against moisture.



When you buy conduit be sure you get the kind in the handy carton with the SAYLORDUCT trade mark.

You will know it by the SAYLOR DUCK.

SAYLOR ELECTRIC & MFG.CO. WHEELING, W.VA.

EMERSON FANS with the 5 year guarantee

For 1924

70 Distributors

This complete line of alternating and direct current, oscillating, non-oscillating and ceiling fans is carried in stock at convenient points by 70 distributors. Favorable season contracts are now ready.

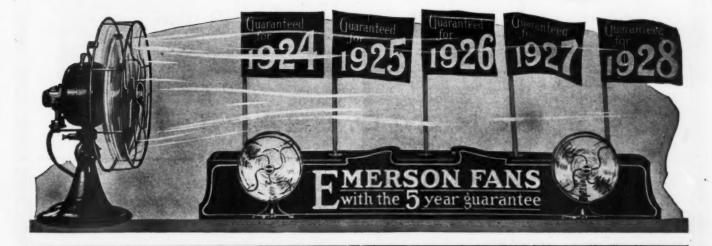
—and Emerson Junior
 The smallest, lowest priced member of a famous quality group.

The Emerson Electric Mfg. Co.

2018 Washington Avenue

50 Church Street New York City St. Louis, Mo.

A Fan Display in the windows of your store has Action and that is what catches the eye, makes the passerby stop, and brings trade into the Store. This display is furnished free to Emerson Fan Dealers



WIRING DEPENDABLE EVICES

Distinguish the best from the rest!

It is easy, and Decidedly Profitable



SPECIFY

"ROYAL" SOCKETS

They employ a familiar construction, but give unmistakable evidence of that nicety of manufacture and perfection of finish that have distinguished all Weber goods for more than fifteen years.



Pull Socket

And the Line is Complete

- 6 Socket Bodies
- 8 Switch and Rosette Bodies
- 20 Caps

19 Bases

On your next order for porcelain sockets, specify WEBER CONSULT OUR CATALOG

HENRY D. SEARS

General Sales Agent

BOSTON II, MASSACHUSETTS

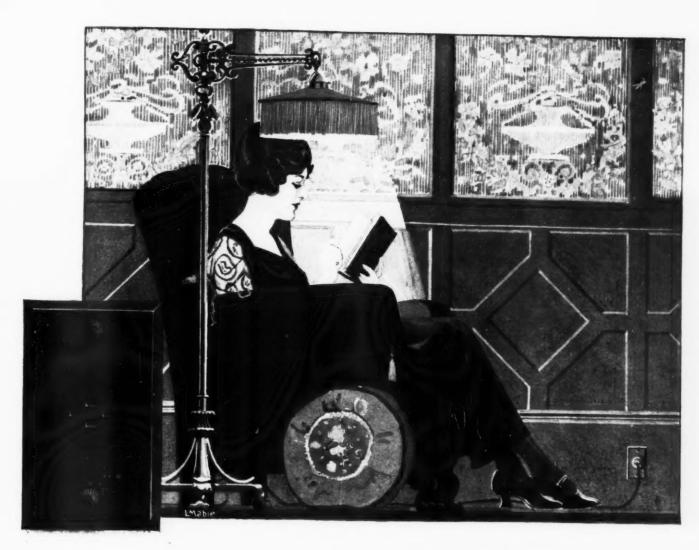
. . .

SALES REPRESENTATIVES IN:
Philadelphia Clevelane

Chicago







(Upper) Single Unit Receptacle No. 980

(Lower) Duplex Unit Receptacle No. 990

A Touch of Refinement

THE atmosphere of comfort and refin ment which is so characteristic of the modern home, has been greatly enhanced by conveniently located electrical outlets and switches, which make possible a more artistic arrangement of furniture and create better decorative lighting effects.

The Connecticut Unit Receptacle is another step ahead in the design and construction of "better grade" wiring devices for those homes, apartments, hotels, etc., that reflect "a touch of refinement."

This receptacle is made of Bakelite, in rich brown color, which has been selected as standard because it harmonizes perfectly with all furniture and wall decorations; but a wide range of colors is available in case special finishes are required.

The Unit Receptacle is very practical, from an installation standpoint, and moreover, it will not tarnish or discolor, and eliminates distasteful marks on walls, caused by continual polishing of ordinary brass plates. A sample will accomplish more than we can convey in this space. "Seeing is Believing."

THE CONNECTICUT ELECTRIC MFG. CO.

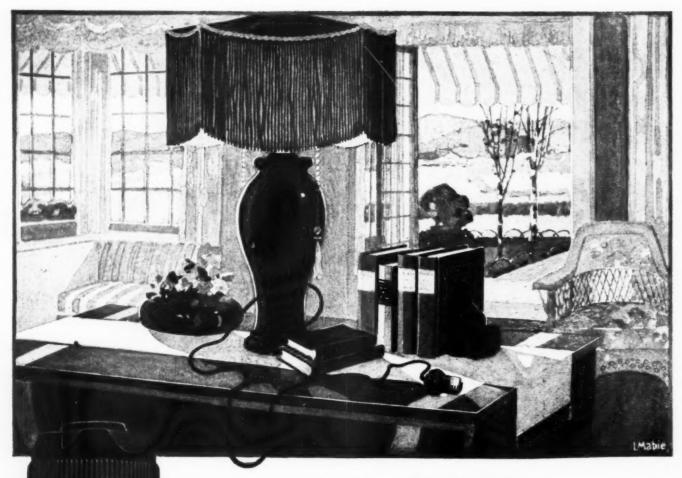
MAIN OFFICE AND FACTORY: BRIDGEPORT, CONN.

New York

Chicago

San Francisco

CONNECTICUT "A-1" DEVICES



A Heap O' Confidence

HEN it comes to staking your last dollar, or a hard earned reputation on some object to be accomplished, it requires a lot of nerve and A HEAP O' CONFIDENCE.

This is practically our position relative to the new A-1 All Bakelite attachment plug, shown in the accompanying illustrations. But, we have so much faith in our product, and the knowledge that a "better grade" plugwill eventually replace the black-molded type on expensive household devices, that we cannot help but feel confident for the future of this plug. Its design, beautiful colors, non-crumbling properties, solid inserts for attaching the prongs to the cap, and many other features not possible in the old type, insure its success and A HEAP O' CONFIDENCE on our part.

The color indentifies the "A-I" plug from the cheaper grades

THE CONNECTICUT ELECTRIC MFG. CO. MAIN OFFICE AND FACTORY: BRIDGEPORT, CONN.

New York

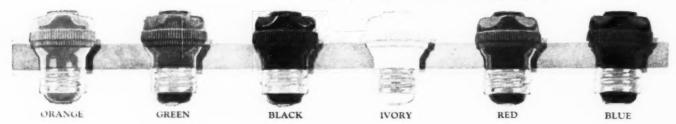
Chicago

San Francisco



"Not Cheaper-but Better"

CONNECTICUT











"A Superior Wiring Device for every Electrical Need"

THE BRYANT ELECTRIC COMPANY 1421 STATE ST., BRIDGEPORT, CONN.

NEW YORK 342 Madison Ave. CHICAGO 844 West Adams St. SAN FRANCISCO 149 New Montgomery St.

Selling Service

A good wiring job is "Service to Safety," "Service to Convenience," "Service to Light."

It no longer is just so many outlets, lamps, switches, etc. It is service.

The plant engineer and every other "live man" wants safety and convenience.

If he KNOWS what lines will best meet these needs, you have found a customer—so serve him on these needs!

Trumbull Safety Switches

"Safety!"

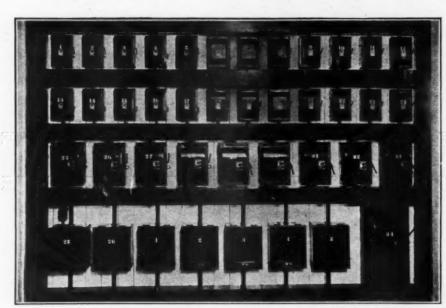
"Service!"

"Economy!"

The

Trumbull

Message



Spread the Trumbull Message

SAN FRANCISCO

A safe, convenient and inexpensive installation of Trumbull Safety Switches in an industrial plant.

A convenient and safe switch installation is the cheapest kind of insurance against renewals and accidents.

The Trumbull Electric Mfg. Co.

NEW YORK 114 Liberty St. CHICAGO

595 Mission St.

Plainville, Conn.

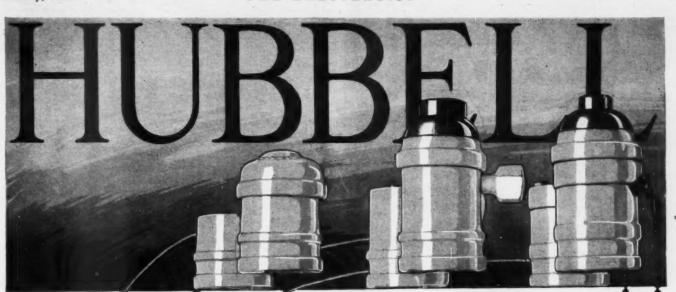
2001 W. Pershing Road ATLANTA

PHILADELPHIA

BOSTON

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

0



PORCELAIN SOCKETS

-bodies interchangeable with all caps and all bases

There's convenience and economy in handling the complete and interchangeable line of Hubbell Porcelain Sockets.

You don't have to lay in a big stock of each complete socket. Just keep on hand an adequate supply of bodies, caps, and bases, in various types,—and sell any combination required. You'll profit through quicker turn-over, have less money tied up in stock, and you won't need as much space for storage.

Bodies are made in pull chain, key, and keyless types. Caps in the following types—Pendent Cap, porcelain; Fixture Caps, ½" and ¼" brass; ¾" brass and aluminum; ½" aluminum; ¼" angle, brass; ¾" angle, brass and aluminum; ½" angle, aluminum. Bases—in concealed, cleat, small ceiling base, and large ceiling base types.





ELECTRICAL WIRING DEVICES





Largest distributors of flexible cords



Fresh stocks of tape and compounds always available on call. Address nearest House. Leadership like that doesn't just "happen." It is the steady outgrowth of a reputation for carrying products of high quality. When you want flexible cord that is made RIGHT, call on Western Electric. When you face an emergency need for any of the wide variety of cords, put our stocks to the test for completeness. When time presses, put us to the test for quick delivery. Address our Distributing House nearest you—you'll find it near enough to be neighborly.

Western Electric Company

Offices in 47 Principal Cities

1053





The Book That Thousands have sent for That Thousands have sent for and the 1924 Advertising Campaign which million will see

comfort and convenience for homeowners and "home-wishers" will be broadcast by this year's Advertising.

Thousands more will send for this book telling how to gain the benefits of electricity through these "Modern Servants" which they will buy from General Electric dealers.

Merchandise Department



MERCHANDISE DEPARTMENT

ERAL ELECTRIC

Chother aign Live Campaign Live in 1924!

A campaign packed with sales power for quick turnover, again tells the story of "live air".

It sells G-E Fans for hot days, for humid days 'round the home, office, store. A campaign to keep fans moving off the shelf and out to customers—that's the GE Fan Campaign for 1924.

The G-E Fan Girl

will be known to every household in the land and to every business place, for she will appear in thousands of dealers' windows during the hot months; in the popular magazines and newspapers read by millions of people.

It will pay you to get in touch with the G-E Distributor now. Arrange for your contract and the sales-making material shown on the opposite page. See list of G-E Distributors on second page following.

Merchandise Department General Electric Company Bridgeport, Connecticut





A General Electric Product

MERCHANDISE

Everybody everywhere will see the

G-E Fan Girl

in the Windows



_in the Newspapers



Cool Live Air!





in the





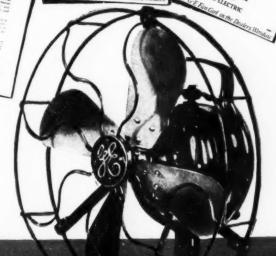














ELECTRIC



Where to Get G-E Service

Bridgeport Works Home of Merchandise Dept.

G-E Sales Office

G-E Distributing Jobber

Alabama, Birmingham Matthews Flee, Supply Co.
Arizmas, Phoentx Southwest G.E. Co.
Arizmas, Little Rock
California, Los Angeles L. Pacific States Electric Co.
California, Oaslami L. Pacific States Electric Co.
California, Derver L. The Hendric & Bolthoff Mig. & Sup. Co.
Camacurat, Flattonia Southern New England Flee, Co.
Camacurat, New Theory Southern New England Flee, Co.
Camacurat, Materbary Southern New England Flee, Co.
Southern New England Flee, Co.
Southern New England Flee, Co.

Diogram of Columbia, Washmetun National Flee'l Supply Co.
Florida, Jacksonville Florida Flee, Supply Co.
Florida, Tampa! Florida Flee, Supply Co.
Seorgia, Atlantal) Carter Electric Co.
Seorgia, Savannah' Carter Electric Co.
Contral Florida Company

Indiana, Terre Haute
Inwa, Don Monres
Kentru ky, Louisville.
Louisville. Belknap Hardware & Mig. Co., Inc.
Wesco Supply Company
Southern Electric Co.
Petringell Andrews Co.

Michigan, Jackson
Minnesota, Diduth
Minnesota, Minneapolisi t
Minnesota, St. Pault
Morthwestern Elec. Equipment Co.
Minnesota, St. Pault
Morthwestern Elec. Equipment Co.
Missouri, St. Louist
Mesca Supply Company
Mortana, Bottof
Burte Electric Co.
Missouri, St. Louist
Mesca Supply Company
Mortana, Bottof
Mid-West Electric Co.
New Jersey, Newark
Tri-City Electric Co., Inc.
New Jersey, Paterson
Tri-City Electric Co., Inc.
New Jersey, Tronton

New Jossey, Trenton
New York, Albanyt . Havens Electric Co., Inc.
New York, Buffalo . Robertson-Cataract Elec. Co.

G-E Sales Office G-E D

G-E Distributing Jobber

New York City§†. E. B. Latham & Company
Royal Eastern Elec'l Sup. Co.
(Also Borough of Brooklyr, Long
Island City and Jamaica, L. I.)
Sibley-Pitman Flee, Corp.
(Also Borough of Brooklyn)

New York, Schenectady
New York, Syracuse Robertson-Cataract Elec. Co.
New York, Utica Robertson-Cataract Elec. Co.
North Carolina, Charlotte Elec. Supply & Equipment Co.
Ohio, Canton
Ohio, Canton

Ohio, Canton
Ohio, Cherchard
Ohio, Cheveland
Ohio, Cleveland
Ohio, Columbus
The Frace & Hopkins Co.
Ohio, Daytam
The Wm. Hall Flectric Co.
Ohio, Toledo
W. G. Nagel Electric Co.
Ohio, Youngstown

Oklahoma, Oklahoma Cirv t. Southwest G-E Co. Oklahoma, Tulsa Southwest G-E Co. Oregon, Portland). Pacific States Electric Co.

Pennsylvania, Erieš Pennsylvania, Philadelphiaš †.Philadelphia Electric Company

Supply Department
Frank H. Stewart Flectric Co.
Pennsylvania, Pittsburght
Rhoie Island, Providence
South Carolina, Columbia
Tennessee, Chattanooga
Tennessee, Knoxville
Tennessee, Memphis
Tennessee, Memph

Tennessee, Nashville
Texas, Dallas†
Southwest G-E Co.
Texas, Houston†
Southwest G-E Co.
Texas, Houston†
Southwest G-E Co.
Texas, San Astonio.
Southwest G-E Co.
Utah, Salt Lake City†
Capital Electric Company
Virginia, Norfolk†
Southern Electric Company
Virginia, Richmond.
Southern Electric Company
Washington, Seattle†
Pacific States Electric Co.

Washington, Seattle† ... Pacific States Electric Co Washington, Spokane ... Pacific States Electric Co Washington, Tacoma West Virginia, Bluefield West Virginia, Charleston† ... Virginian Electric, Inc. Wisconsin, Milwaukee

‡No G-E Office

†Warehouse

§Service Shop



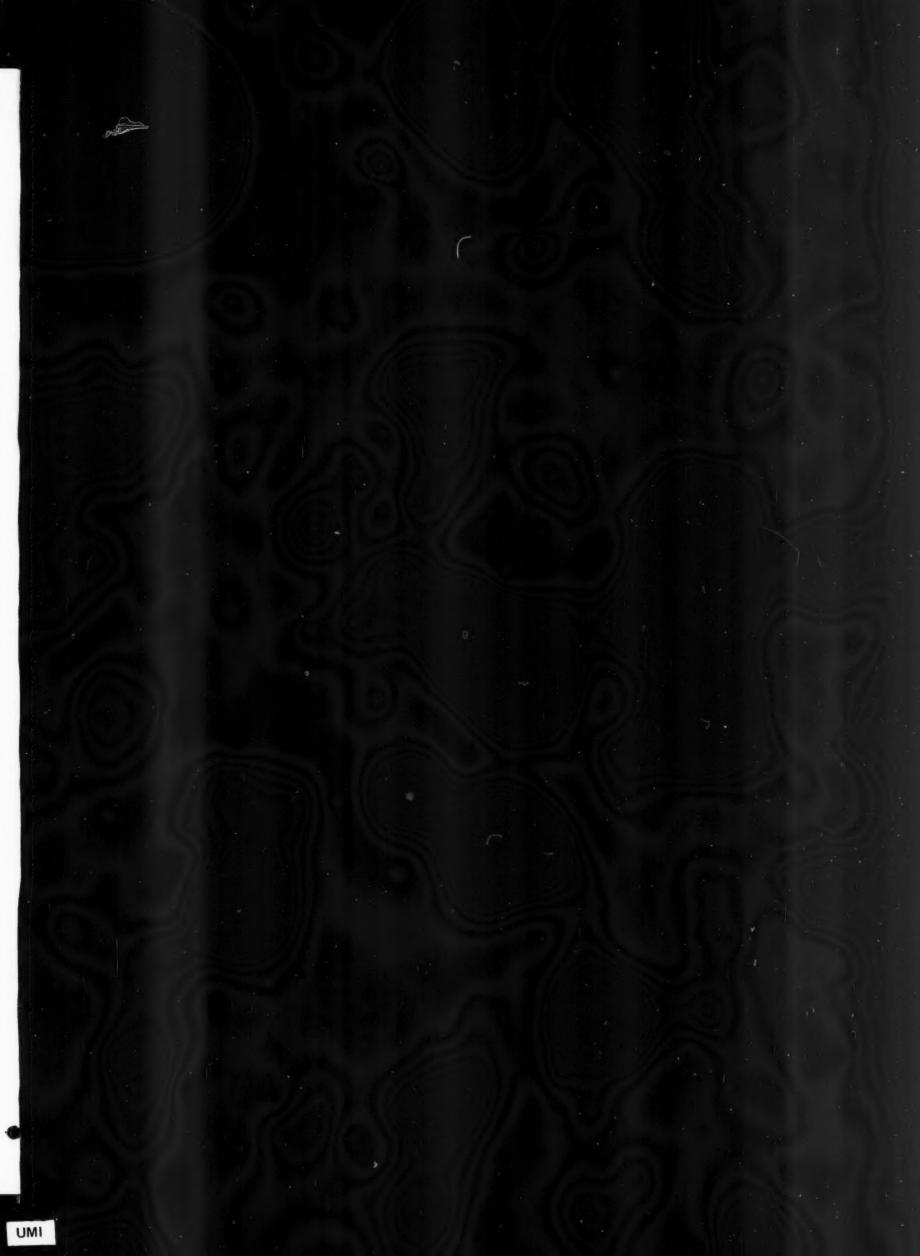
General Electric Company factories are located in forty cities and employ 100,000 people. For Canadian business: Canadian General Electric Company, Ltd., Toronto, Canada Distributors for the General Electric Company Outside of the United States

INTERNATIONAL GENERAL ELECTRIC COMPANY, INC.

120 Broadway, New York, N. Y.

Schenectady, N. Y.

GENERAL ELECTRIC





The Electragist

Official Journal of the Association of Electragists—International

FARQUSON JOHNSON Editor JAY S. TUTHILL Associate Editor R. F. PAIGE Advertising Director

TECHNICAL EDITORIAL ADVISORS

CODE Hubert S. Wynkoop, M.E. Member Electrical Committee N. F. P. A.

INSTALLATION
Allan Coggeshall, E.E.
Vice President Hatzel & Buehler, Inc.

POWER
William J. Shore, E.E.
Contracting Electrical Engineer
RADIO
J. Howard Pile
Distribution Counsellor

Volume 23

FEBRUARY, 1924

No. 4

Good Things to Read in This Issue:

- The Radio Engineer-Dealer. While this number fairly radiates with radio, here's one thing that every contractor-dealer should read and digest to the full. Tells how to be a Radio Engineer-Dealer and why; present and future needs; and presents some straight from the shoulder arguments.
- Do It Electrically. Did you see the comedy-drama at the annual convention in Washington, D. C., last October? If not, don't worry, for here it is, novelized by Tom Chantler, the author. Starts in this issue—read it!
- The New House Wiring Manual. The first writeup of this aid to electragists is published in this issue. All installation men will want to familiarize themselves with this new pamphlet.
- Power: How to Sell and Install It. This was one of the features of the last convention which created such spirited discussions from the floor. All who took part in it will be interested in seeing it in this issue and all contractor-dealers will want to read it.
- Chats on the National Electrical Code. This is a monthly feature that is proving highly popular and is eagerly sought by readers of this magazine from month to month. It is written by an acknowledged authority and discusses the problems that arise every day with users of the Code.

Additional Matters of Interest in the Following Pages

Published Monthly-Established in 1901

Publication Office: 100 Liberty St., Utica, N. Y. Editorial and Business Office: 15 W. 37th St., New York City

Address all Mail to Editorial and Business Office

The Power of Concerted Thinking

Eight thousand copies of this magazine went out to readers in January. More than eight thousand copies of this issue will be printed and mailed.

With few exceptions these eight thousand readers are electrical contractor-dealers. Most significant, they are the responsible, established electrical contractor-dealers upon whom the industry is looking to do an adequate job of retail distribution and service in wiring and merchandising—the real electragists.

An adequate job of retail distribution needs the concerted action of all electragists to speed up their business—with this spirit imparted to every individual in every concern. It needs improved business methods, elimination of waste, better salesmanship, and above all, knowledge.

Knowledge of your business—of its costs, of its profitable sides and its weaknesses, of the character of service it is giving your customers.

Knowledge of your opportunities of what others are doing, that you may profit by their experience.

Knowledge of what the electrical industry expects of you—and must find.

Concerted action, then, means concerted thinking.

As you read these pages each month, remember that in the measure you use the knowledge they bring to you are you doing your part—with the eight thousand other readers—in turning concerted thinking into concerted action.

Personal Views of the Editor

When you eagerly tore the wrapper from this month's copy of your magazine, you found that it was easily removed. The magazine was folded-not rolled. As you perhaps will notice, this is only one of the improvements in THE ELECTRACIST—a mere forerunner of the good things to come. Next you noticed the new cover design-a departure from the greenish tint of former years. At first glance it will appear that this new border is printed in three or four colors, but due to dexterous handling by the artist and the engraver, only two printings are required to get this result. The mosaic tile effect is not going to please everybodynothing ever does-but it possesses a number of desirable qualities. It is individual; it is striking though dignified; and among other publications it sticks out like a gold piece in a handful of silver.

A few other physical changes will be noted as you pass through the various pages. Some changes in makeup are made with a desire to create reader interest. That's the strange and elusive thing that advertising sharps harp on so much. To one who is not a student, the scientific magazine has no appeal; the plumber finds no reader interest in the pharmaceutical journal; and nobody but star gazers would read a paper on astronomy. Basing my opinion on past experience, I find the contractor-dealer does read his trade magazine. A year or two ago I published something that did not meet with the approval of readers, and soon I was buried under an avalanche of protesting epistles—convincing proof that this magazine possesses reader interest plus. But the present purpose is to make it still more readable—more attractive—more interesting—more profitable, if an editor may be permitted to so express his purpose.

All of the proposed plans cannot be put into operation in this issue. Processes of improvement are slow—and expensive. Funds do not grow on trees, and all of the improvements cannot be accomplished until the income increases—prospective advertisers will please note. However, as improvement is the order of the day, an endeavor will be made to continue to improve these pages from time to time until reader interest reaches the point of saturation.

In speaking of the electrical industry in general, and of the central station interest in particular—President Walter Johnson of the National Electric Light Association recently said he believed that the 1923 figures would total fifty seven billion kilowatt hours; and then he contrasted those figures with the twenty five billion kilowatt hours of 1917, stating that central stations had made greater progress in the last six years than during the preceding thirty five years.

While these figures are amazing and should tend to spur every one on to further achievements, think of what the contractor-dealer branch of the industry has accomplished in forty one years -which is the period of time covered by Mr. Johnson's statistics. If my memory registers correctly there were no contractor-dealers at that time, so the total number of feet of wire run by them was nil-and there were no appliances to sell. Thirty five years laterin 1917—this group had grown into the thousands. Today there are enough of them to encircle the earth with wire about fifty seven billion times in much less than a year-and some say there

are at least two curbstoners for every reputable contractor-dealer.

Be that as it may, there are not too many contractor-dealers of the right sort—and even the curbstoner is rapidly becoming less obstreperous. Two years ago he was a menace; but it's now noticeable that he is thinning out his own ranks. Survival of the fittest—the honest competent ones progress and develop into desirable citizens, while the dishonest incompetents fall by the wayside.

Anyhow, when the electragists reach the hundred percent mark in their association, there'll be no chance for the curbstoner. Even now in sections where the public has learned that an electragist is a man of his word; that he always can be depended upon; that he uses quality material and does quality work; and that he renders capable service—why the public will not tolerate a curbstoner. Sell the entire populace on the word electragist and it's goodby to the curbstoner.

Which reminds me of a letter that came into the A. E. I. Headquarters not long ago. It was short and to the point: "Please make me an electragist; check enclosed." That fellow evidently appreciates the value of the trademarked word. I am told that a member of the A. E. I. in a midwest city got nine of his fellow competitors to join the A. E. I. in a bunch. He sent in the applications himself, with checks to cover. That member realizes that the more electragists there are, the better standing his branch of the industry will have in his community.

If all of its members would become imbued with this same spirit, and if every member would get nine new members, it would be a walk away for the International Association. It would then be able to accomplish its purpose—to make the trademarked word electragist mean as much to the public as it does to the member.

F. J.

Do It Electrically

By THOMAS F. CHANTLER

Staff Member of the Society for Electrical Development Novelizes Unique Play Which Met With Great Favor at the Convention

[NOTE: This is a story based upon the play by that name written by Mr. Chantler for presentation at the last annual convention of the Association of Electragists in Washington, D. C., and produced by a cast composed entirely of members of the electrical fraternity of that city under the direction of Arthur F. Carroll, a former stage character of prominence. The play was especially written as a convention feature and its novelization appears exclusively in the pages of this magazine. Read this interesting story. It brings out clearly and forcibly a business moral that merits the serious consideration of every electrical contractor-dealer.—The Editor.]

When one puts head and heart into winning Dame Fortune's favor she always succumbs to such absorbing courtship. But always too she insists upon her prerogative as the donor and bestows her rewards as best suits her whim. Sometimes indeed the first hint of her growing favor comes in the guise of further reverses and misfortunes cleverly designed to test the sincerity of him who seeks her indulgence. He then must look beyond the adversities of the moment to the hour when the lady's mood softens, as in truth it will for all whose courage holds.

But young Carvel Blake knew naught of this heartening philosophy, and his courage had been all but vanquished by the opposition he encountered in establishing himself in the electrical business in the bustling little town of Tryville. The iron of disillusionment had seared deep into his soul. He realized too late that he had entered the lists illy equipped for the fray. Participation in the great war had shocked him into recognizing the need for specialized training in the work of reducing the numerical strength of the enemy, but it somehow had escaped him that success in the battle of business required equally rigorous training and observance of the rules that experience had adduced for all who would succeed.

The purely technical side of his work as a contractor he knew well and liked. When he started in business he felt that with such an equipment, backed by a great willingness to work, success was assured. He indeed had worked, and worried much, but success seemed no nearer than when he began. Such meagre return for his best efforts seemed unnatural, unreasonable and unmerited. He was dangerously near to looking upon himself as one picked

by unkind fate for a life of misfortune.

On the day this story begins he was driving recklessly along the bank of the treacherous little Rapid river that skirts the town on the north, returning from a fruitless trip to collect payment for a small wiring job that he had done months before—at a loss, as he later discovered. He thought of the end to which his hopes were heading and the realization nauseated him. He tried to



Thomas F. Chantler

see himself as others must see him—in his late twenties, standing a little less than six feet, lean and active, with frank blue eyes that looked out over a rugged nose and firm mouth, he knew, without conceit, that he was a presentable man.

How his competitors contrived to profit, if indeed they did, baffled him completely. For the low prices at which they took work away from him defied his understanding and slipped nimbly away from the finest point he could whittle on his pencil. He was at the point of feeling sorry for himself, when suddenly he heard a cry.

"Help! H-e-l-p-! H-e-l-p-!"

A woman's voice! Leaping from his car as it came to a grinding stop; scrambling around the clump of tall bushes that obstructed his way; he came full upon the tragedy occurring out there in the swift little river. The capsized runabout lying almost in midstream, its nearly submerged top divid-

ing the water like the swell at the bow of a moving vessel. The broken fence at the turn of the road and the deep tracks in the bank spoke mutely of what had happened. "H-e-l-p-!"

Unmindful of his own troubles in the presence of this, a real tragedy, he rushed up the bank of the river far enough to allow for the pull of the current and prevent its sweeping him past the car. Hat, coat and shoes were discarded somehow. "Hold on; help's coming; hold on!" he yelled, dominated by the instinctive urge to reach the car in time. He plunged into the racing water. Swimming was his favorite sport and he did it well, and the long overhand stroke that was his special pride sent him along ahead of the current at a terrific speed. This was something he at least could do well and he exerted himself to the utmost. But the wicked little river, strong in its perpetual power, began humbling his pride by pulling him down stream and away from the car.

Below the car now and just a few feet away he struggled manfully to hold his position against the current. His strength was ebbing rapidly and he raged inwardly at his impotency. Slowly but remorselessly the breach between him and the car widened. He noted it and redoubled his efforts, contriving again to hold his position but making no headway.

Faintly then, from the side of the car furthest from him, came another appeal to his strength, a weak little cry from a mouth filled with muddy water. It was the final appeal and he knew it. "Hold on," he cried as encouragingly as he could. He whipped his muscles into one supreme effort that raised the buzzing in his ears to a terrifying crescendo and filled his body with a great ache—a courageous outpouring of his strength that left him weak and breathless the moment his clutch had fastened upon the frame of the car.

Thinking a prayer of thankfulness that he lacked voice to utter, he worked around to the other side of the car. The girl was still there. A helpless, inert body, one tiny hand clutching the framework in blind obedience to his heartening command. Protectingly his free arm circled her waist and drew her up so that her head was above water.

The responsibility that became his with that action cleared his brain and set his thoughts upon what next to do.

Two hundred feet below the current set towards an outreaching point of land then sheered off again upon its course down stream. He marked that as his objective. The sense of victory had given him new strength and he felt sure now of his ability to win. Swimming upon his back and towing the senseless girl he kicked clear of the car and shaped his course for the little tongue of land. Almost before he knew, he felt himself kicking against the bottom and supporting arms were helping him to his feet—his burden was taken from him.

He was weary and sleepy but the voice of Dr. Barchester prodded his tired senses back to understanding attention. "Good work, Carvel, my boy! Lucky I happened this way today. Take it easy while I attend the girl; then I'll fix you up. Here, drink this. That's it. Now lie there in the sun"—was the last Blake heard as he dropped off to sleep.

Next he heard a long drawn sigh, and started up, only to sink back again with the comforting realization that he could rest, now that Doctor Barchester had relieved him of his responsibility. The leading physician of Tryville, a fine type of the old fashioned family practitioner, elderly but still hale and hearty; wise in his knowledge of humanity, the good doctor worked deftly to resuscitate his charge. "Thank God!" he exclaimed softly, as the girl responded to his treatment, opening her eyes momentarily and smiling up at him wanly. He had known her from

infancy, brought her into the world in fact, and his sympathies as well as his professional skill were aroused.

Carvel Blake, too, knew Mildred Everton, but from afar, and he felt himself suffused in a great glow of satisfaction when he realized that it was she whom he had rescued. Her aunt, Mrs. Birdman, held sway over the social destinies of Tryville with an authority that none had questioned successfully. Washington Emery, her guardian and Mrs. Birdman's brother, had left Tryville a poor boy and became a power in Wall Street. He did not share in the slightest in his sister's social aspirations and was in fact rather amused by her preening and strutting. But Mildred was the apple of his eye and he held hopes for her future happiness.

"Feel equal to driving your car back to town, Carvel?" he heard the doctor asking. He had been lying prone with eyes closed wondering about the girl and telling himself that he was foolish to think that his would be the privilege of driving her back to her home. He wanted to do so, he realized, somewhat to his secret embarassment, when he considered that it was only his part in the accident that made such a possibility probable at all. "I'll take Mildred with me in my car, if you can manage your own. Feel up to doing that?" the doctor asked kindly.

"I'm all right, doctor," he heard himself saying mechanically, his eyes and thoughts upon the girl, who sitting up now, her back against the doctor's knee where he knelt behind her, was looking full into his eyes and smiling. "It was nothing, Miss Everton, and I'm glad I came along in time," he replied to her whispered words of gratitude.

"It is very kind of you to put it that way," she replied. "Just the same you really did save my life and I want you to know that I'm very grateful and shall never forget. When I'm able," she said, faint from exertion, "I hope you will come and see me."

"Here, Carvel," interposed the doctor, fearing for the strength of his charge, "give me a hand in getting Miss Everton into my car. Then you hurry home yourself and take a good drink; my orders," he concluded jovially.

A petite figure surmounted by a softly rounded face punctuated by a small, sensitive mouth, a delicately chiselled but somewhat determined nose and liquid brown eyes beneath faintly arched brows and a wealth of wavy brown hair. That, rather than visions of his business in the hands of the receiver, was the dainty alluring image that danced before Carvel Blake's eyes as he drove his car back to town, dry clothes, a drink and, yes—opportunity to give rein to his imagination.

Months came and went without marking any improvement in the affairs of the Blake Electric Company, which floundered along somehow. Carvel Blake and Mildred Everton in the meantime had become fast friends, to say the least, and only his inward sense of the sorry figure he must cut in her eyes as a business man deterred him from putting his fortunes to the test. The frosty acknowledgment her aunt was wont to accord him when he chanced to pass her on the street or called at the house to see Mildred sup-



Success in the electrical business is largely dependent upon the two factors, courtesy and service. Which of these is your store? There are Mickey Dugans trying to retail electrical goods who don't have a proper stock arrangement, who spend too much time getting free theatre tickets, who don't use the right system of lighting to promote their trade, and who because of their careless manner of leaving tools, wire, boxes, and other debris around to clutter up the floor of the store, actually preclude the possibility of a cash customer finding a place to stand to write out a check

d

d r. plied added reason for accepting discretion as the better part of valor; and so he bided his time. He cringed inwardly when he considered the possibility of having to go before Mildred's uncle and make a statement regarding his ability—or rather disability—to provide for her.

That dread of impending failure sapped his assurance and injected a note of uncertainty into his dealings with others that handicapped him severely. Lacking confidence in himself he could not command it in others. But Dame Fortune had still another test for this man to weather, although Carvel Blake had no premonition of its imminence as he sat in Attorney Stover's outer office waiting to see him regarding a wiring job for one of his clients.

However, when "Mickey" Dugan blustered in and dropped noisily into a vacant chair, greeting Blake with a friendly gesture qualified by a sharply questioning look, he wondered if his visit boded ill for his chances of getting business. He knew Dugan as an expugilist of no special ability who had drifted into the electrical field and was eking out a precarious existence by doing small wiring jobs at prices with which no man having ordinary business expenses could hope to compete. Dugan had taken work from Blake before and his presence there in the office at that time depressed him.

But the entrance of the girl to admit him to the inside office diverted his thoughts into other channels. Quite without conscious effort he found himself noting how far short this girl fell in comparison with Mildred Everton. Tall and somewhat angular, rather masculine features and brilliant blue eyes, taffy colored bobbed hair and mannerisms reminiscent of the cabaret and dance hall. She aroused in Blake a great thankfulness for the sweet seriousness and quaint little ways that added so much to the natural charm that Mildred exerted upon all she

Little did Blake realize that Mildred's aunt had preceded him into Burchard Stover's office just a little while before for the express purpose of enlisting Stover's services in establishing a definite barrier between himself and the girl. Could he have heard Mrs. Birdman and been present to note the look of anguish that accompanied her assurance to Stover that unless something was done her niece would disgrace the Emery family by marrying a mechanic, a man who put electricity in houses, his

cup of humility would have been filled to overflowing.

Burchard Stover had acquiesced readily to Mrs. Birdman's wishes regarding Blake, for he knew Mildred well and had long cherished the hope of marrying into the Emery family himself. Mrs. Birdman had hinted quite pointedly that she regarded him as an acceptable suitor. He hoped that she had not sensed his deception in addressing as "Mr. Brown," the waitress in the station restaurant with whom he had been conversing over the telephone arranging a clandestine meeting when she was unexpectedly ushered into his office. He would have to be very careful, he realized, in conducting such affairs in the future.

Fortunately for Blake, who was already somewhat upset by encountering Dugan, he knew nothing of this arraying of forces against him. Mrs. Jelray, one of Stover's clients, was having her house wired; Blake had solicited that business; she had referred him to Stover, her attorney. His thoughts were entirely concentrated upon the business at hand. He wanted the job but he realized even as he argued his fitness to do the work that his sales argument was weak—his words were hollow—they were just words.

Stover, tall and well formed, his aristocratic features marred by early signs of dissipation which made his age appear nearer forty than thirty, listened quietly at first, while Blake launched forth with a perfect torrent of words regarding his plans for doing the work. "Just a minute—just a minute," he interjected finally. "I haven't time to go into that now. How much—for a job such as you describe?"

"Why!" exclaimed Blake, "I'm not more than half through telling you what I'm going to do."

"Put it in writing; I'll read it at my leisure," insisted Stover. "How cheap? That's all I want to know now."

Rebelling inwardly but not knowing what else to say, he named his price, insisting that the figure mentioned would be for work of the highest quality. Stover made a note of the price, commenting as he did so that it was excessive. Then he startled Blake by changing the subject: "By the way," he said, looking impudently at Blake, "apropos of high prices, you are the man who helped my client, my client's niece, Miss Everton, the day she drove her car into the river, aren't you?"

"Yes, I helped M'ss Everton, but it wasn't any great feat."

"Quite so," agreed the lawyer.

"Well, if the report that comes to me is correct, you seem to have the habit of charging high for everything you do."

charging high for everything you do."
"Say!" he demanded, moving forward belligerently, "what are you driving at—that I charged Mildred, that is, Miss Everton, money for coming to her rescue?"

"No, not money," assured Stover, mollifyingly. "But, Blake, let me give you a b't of advice. Miss Everton will never say so, of course, and she'd probably be kind hearted enough to deny it even if you asked her; but the fact is, people in her own set and station in life consider that you are forcing yourself upon her, trading on the fact that you rendered her a little assistance. Her friends think you are asking a very big price for what you did. Take itf rom me, Blake, it won't help you any in business, not if her friends have any influence."

"Stop!" thundered Blake, too incensed to speak calmly. "I came here because Mrs. Jelray sent me. Leave my private affairs out; I didn't ask for advice and I don't want it," he concluded hotly.

"That's not advice," returned the lawyer in kind, "I charge for that. It's a warning," he went on, regaining his control as he talked. "A bit of friendly warning, you understand. Now take it calmly. You'll never marry Miss Everton; a better man, one in her own station intends doing that. So the sooner you forget her the better it will be for you and your business. Think of the lady," he urged soothingly, "and be generous. You can't support her the way she has been accustomed to living; do the manly thing and stop making her feel under lasting obligation to you. You said yourself that you didn't do more than any other fellow would have done the day you pulled her out of the river. I'm tremendously sorry, Blake," he concluded with a great show of good fellowship, "but we lawyers have to do many unpleasant things at times. You appreciate my position, I'm sure. Mail that estimate in to me today, won't you?" he concluded pleasantly, turning to the papers on his desk to indicate the interview was ended.

Too angry to find words, Blake realized dumbly the sorry figure he cut, standing speechless before the imperturbable Stover and not knowing how to depart without losing the remnants of self respect that remained to him. Twice he essayed to speak, but the words would not come. Vowing somehow to redeem himself he turned and strode out of the office.

(To be continued.)

Expert Service Needed in Radio Retailing

Help Wanted! The radio branch of the electrical industry wants help. It is in need of Radio Engineer-Dealers. Apply at once to any distributor of radio supplies and equipment.

What is a Radio Engineer-Dealer? This question is answered in the pages that follow, and it behooves every live wire electragist to ponder it well.

Here's the chance—get in on the ground floor and be a Radio Engineer-Dealer. It pays well. And best of all, it is permanent; for beyond the shadow of a doubt the radio business has come to stay for all time. It is as permanent as the ether through which the wireless speeds.

The following article was prepared by one who has carefully studied the merchandising field of radio, as well as the capabilities of the electrical contractor-dealer. He sees a wonderful opportunity open to this branch of the electrical industry. He tells how to take advantage of this golden opportunity.

Every electragist should read this article and decide for himself whether or not he will make of himself a Radio Engineer-Dealer. If not, then let him encourage some of his capable kinsprits to apply for the job.

Radio Engineer-Dealers are in demand. Study the situation and see if you can fill the bill.

The Radio Engineer-Dealer

Great Field Open to Electrical Contractor-Dealers Who Capitalize on Live Opportunity of Expert Service

Out of the wild scramble of the first two years of the radio business there has emerged one of the largest and soundest businesses in the world. For 1923 the volume of radio equipment sold was second only to wire and cables among electrical materials manufactured. Authentic figures of forecasts for 1924 show a tremendously increasing market for radio devices of highest standards.

As in all industries which have developed through popular demand faster than normal channels of distribution can supply, the retailing of radio equipment has spread into every conceivable type of store and dealer. The scrambled, undirected methods of selling resulting from this, the cut price sales unloading bankrupt stocks, the competition of inferior lines of equipment thrown on the market by irresponsible manufacturers hastily organized to take advantage of the popular demand-all of these things have discouraged many electrical contractordealers who have tried to compete in merely "retailing" radio.

In its earlier stages retailing radio was largely the stocking of quantities of small parts for the schoolboy experimenter, with his small allowance, to buy piecemeal and put together. Oftentimes the sale of a part consumed many times its value in education of the buyer before he would complete the sale. Rapidly changing types of materials and almost overnight changing whims of the public as new ideas came to them through the radio supplements of every newspaper, drove frantic the dealers who were trying to carry radio parts.

Out of all this muddle, like a traffic jam at a congested corner, the traffic is straightening out and is ready to proceed in an orderly way, carrying increasingly greater volume through its orderliness. But from the jam the radio industry, manufacturers, jobbers and retailers, have learned some very definite facts and are planning the course of future arteries to handle the traffic. Complete radio sets have been developed that can be sold like a phonograph, and these are being standardized and brought up to the highest quality. The public has been educated to know that only high quality sets can give the greatest results, and the very

appeal of radio itself that calls for the owner of a set to want to pick up more and more remote stations is constantly increasing the demand for higher priced equipment.

One thing stands clearly in the minds of manufacturers and jobbers of radio equipment-there is a tremendous need of more electrical contractors and contractor-dealers handling radio. Every other line of retail store is offering its services to sell radio devices, but the electrical contractor has the advantage over them all if he will use it-technical knowledge of the customer's requirements and the ability to properly fill his needs. The radio manufacturers and jobbers are keenly alive to the need of this service and are looking to the electragists for the answer-but if it is not forthcoming retail distribution of radio will go more and more through other channels.

Every electrical contractor-dealer should consider this problem carefully. and then survey his own field for his opportunity to capitalize on his own particular advantage over other retail stores. He should consult his jobber and lay his case before the jobber to see if he has analyzed it right or completely. And when he finds his opportunity he should lay out a program for his radio sales along the definite lines in which he has unique advantage and get his share of the enormous radio business which will be done each year. Unless he does these things he cannot complain if distribution of radio goes through other channels.

Such a survey will probably show the electrical contractor-dealer several things.

First, he cannot compete with the 5 and 10 cent stores and chain stores in the sale of small parts—nor should he try to as the basis of his radio business. The 5 and 10 cent store is organized to give a cheap sale at a very small profit—and nothing more. That is their service and they do it well. It is folly for the electrical contractor-dealer to try to cheapen his service to compete with them.

Second, he cannot compete with the cut price store handling inferior goods, bankrupt stocks and questionable makes of equipment—nor should he try to, for the very competition of this class of business leaves nothing for his efforts, and his greatest assets, technical service and responsibility, are lost sight of.

Third, there is a constantly increasing demand for complete radio sets, up to the highest priced instruments to be had in cabinets of finest workmanship. This business calls for real salesmanship; it means unit sales of hundreds of dollars each with gross margins greater in proportion to the sales effort than much of his other business; and it means a new point of contact with customers in his community of utmost value to him.

Fourth, and most important, there is a very great need today for more intelligent selling of radio equipment, requiring just the technical knowledge of electrical problems that he possesses. The highest priced radio set may not give the customer satisfaction if improperly set up; if aerials are too long or too short; if the relation to other wires, foliage, etc., is wrong; if it is improperly grounded; or if that particular type of equipment is unsuited to his conditions or the use he plans to make of it. In all of this the electrical contractor is especially fitted to give service—his greatest asset.

Having found from his survey that there is a real opportunity for him for increased business in the radio field, the electrical contractor should lay down a definite program, with well charted lines to follow and principles from which he will not depart. They should include these fundamentals:

First, that he handle only well established makes of equipment of the most reputable manufacturers through regular distributors.

Second, that he is not a radio dealer—he is a radio engineer-dealer, and that as such he has more than a radio device to sell his customer, and salesmanship of his service must be developed to the utmost.

Third, that the basis of his business must be complete sets, but no sale shall be made until the customer's requirements are thoroughly known and the conditions under which it is to be used are established.

Fourth, that installation of equipment, erection of aerials, grounding, etc., which is the technical service he 8

h

i

h

t

8

g

sells his customer, shall be a profitable part of his business. The electrical contractor who fully develops this side of his radio business may well term himself an "antenna engineer"—a branch of radio engineering with great possibilities.

The radio engineer-dealer needs to study and develop himself along lines of greater salesmanship—a development that will reflect itself in every department of his business. He needs to understand his customers, the psychology of their desire for radio in their home, to be installed in their living room with high grade furniture, alongside a thousand dollar piano (and for the same purpose, the aesthetic entertainment of his family and his guests).

Recently a prominent business man living in a \$25,000 home, and driving a Cadillac car, went into a dealer's store to buy a radio set. He was sold a \$75 set, and knowing nothing of radio, supposed he was getting what he wanted, as it was made by a manufacturer of high standing and he was assured by the dealer it was a fine equipment. It was—and so is a Ford car, but the firm of auto dealers who tried to sell that man a Ford when he ought to have a Cadillac would lose his business forever, for he understands cars.

Today this man knows his \$75 radio set was sold to him by a dealer who did not serve his needs. The set was out of place in his home where he had a pride in his furniture; it was limited in its radius and meant apologies to his guests which spoiled his pleasure in what it could do; it was a Ford while he drives a Cadillac. And today he has thrown out the first set and installed a \$350 instrument through a radio engineer-dealer who knew what he required.

Margins of discounts have improved as manufacturers have studied the needs for retailing until today the retail dealer can average 33½ percent on

highest grade equipment, and on some lines requiring installation at the home of a unit selling for over \$200 the margin to the radio engineer-dealer is 40 percent. How many electrical contractors take house wiring jobs of less than \$200 on margins of less than 40 percent.

The contact with the community in building up a valuable trade for the contractor-dealer's store, the pulling power for customers, the goodwill established, the increased volume of business—all of these are additional profits from the sale of radio equipment plus service. But most important for the electrical contractor-dealer to consider is the tremendous field for him today for profitable business in specialized radio selling service—and that the industry is looking to the electragists to give that service.

Survey your situation at once; talk it over with your jobber; lay out your program for 1924; and become a radio engineer-dealer.

Business and Recreation Happily Combined

A. E. I. Plans 1924 Convention at West Baden Springs, Indiana, Next September

The Association of Electragists—International is planning for its 1924 Convention, which is to be held the week of September 29th to October 4th, a complete departure from the usual custom of going to a large city. Arrangements have been completed for taking over the West Baden Springs Hotel at West Baden, Indiana, with all of its hundreds of acres of grounds and attractions as the mecca for the electragists' meeting.

West Baden Springs is located just south of Indianapolis, and is about an equal distance from Indianapolis, Louisville, Cincinnati, Evansville and Terre Haute. Only a few miles from the hotel is the United States Government marker locating the exact center of population of the United States.

The splendid roads throughout all of that territory will undoubtedly bring a large number of convention delegates by automobile from many of the surrounding states. There is ample provision on the grounds of the hotel for parking over two hundred cars under cover without charge, and the service garage can handle fifty cars at a very nominal cost. Reduced rates on the railroads are being arranged for from all points.

This convention will be unique in many ways as an electragists conclave. The slogan of the convention, "Business and Recreation Happily Combined," expresses the spirit that is planned for the week.

All of the facilities of the great hotel, which has accommodations for twelve hundred guests, will be turned over to the electragists for the week, including the use of the sporty nine hole golf course, and all the tennis courts, bowling alleys, and other recreation attractions. The rates at the hotel, which is American plan entirely, are very reasonable. Comfortable accommodations are available, including all meals and other charges, as low as \$7 per day, and the highest cost is limited to \$10 per day. It is expected to make the registration fee \$5, so that this 1924 convention with all of its many unusual attractions can be enjoyed by electragists at a lower cost than would prevail in any large city.

One of the distinctive features of this convention will be the gathering



The wonderfully laid out grounds with the beautiful hotel in the distance where the next annual A. E. I. Convention is to be held. All forms of sport are afforded and there are many features of this year's meeting in addition to the carefully planned business sessions which will attract electrical contractor-dealers from all parts of the United States and Canada

all rehe ed

ip-

ng.

ly

to

pi

sa

th

W

th

ex

m

sta

cle

th

B

sy

in

in

to

ha

ad

of

ha

cre

he

iai

ou

af

tal

ab

di

an

al

ea

ter

mo

ati

do

cor

sev

COL

of all of the delegates under one roof, eating all of their meals together in the great dining room that can serve six hundred people at one time, and all sharing in the well balanced program of Business and Recreation that will make for deeper friendship and better understanding among all who attend.

It is planned to devote each morning to business sessions of the convention with programs of unusual interest to the electragist. The afternoons will all be given over to organized sports, and no finer opportunity exists in the country for each one to enjoy the particular sport which appeals to him. The evenings will have short sessions of business enlivened with special features and followed each night by dancing in the great inner court of the hotel known as the Pompeian Room, one of the most remarkable rooms in the world and with a spacious charm that makes it one of the great attractions of the hotel.

The many unusual features of the West Baden Springs Hotel and its extensive grounds, located in the heart of the famous Lost River Valley, makes this 1924 convention of the electragists a real vacation appeal to the electrical contractor-dealers to bring their families for a week of real enjoyment. Special programs of sports will be arranged for the ladies, and for those who do not care to play golf or tennis, or go on the many delightful walks through the hills, there will be other features such as afternoon teas at the club house and opportunities for unusual auto trips to the many famous points nearby.

No finer week in the year could have been selected than the early days of October for this convention at West Baden Springs. Already keen interest is being shown by electragists throughout the country towards making this one of the greatest conventions they have ever held.

The convention program is being planned to give the delegates attending a real forum for the exchange of the best thinking on their problems, and no better investment of time and money can be made by the electragist than to set aside that week of this year to join with his fellow electragists in such a program of business and recreation combined.

The Factor That Determines Profit or Loss

By F. W. GREUSEL

Why Proper Accounting is Vital is Shown by President, G-Q Electric Co., Milwaukee, in Giving Results of Campaign in That City

In connection with the campaign conducted by the Milwaukee jobbers to promote the installation of proper accounting systems in the business of electrical contractor-dealers and thereby prove the value of correct bookkeeping methods in determining the question of profit or loss at inventory time, I have called personally on a number of local contractor-dealers who have adopted accounting sets as the result of this movement.

All of these concerns have been operating for some time, and I was familiar with the organizations before the new accounting systems were adopted. The changes, however, which have taken place in the morale of the individuals as well as the general atmosphere surrounding the business since the installation of proper bookkeeping methods was so apparent that I was greatly and pleasantly surprised. There seems to be a feeling of confidence existing among the executives which was lacking previously.

In every instance those interviewed were anxious and desirous that their competitors who are not employing uptodate accounting systems should realize their importance and value, and were hopeful that even the smallest contractor-dealer engaged in the business should have some kind of approved set. I am frank to say that I have confidence in the future of the electrical contractor-dealers in this city if they will abide by proper bookkeeping.

Below is the result of the interviews made and each dealer interviewed will be named by the letters A, B, C, and D. The answers in each case are significant of the questions asked and it is believed that they show the value of the campaign conducted:

Firm A

Firm A is a contractor-dealer, operating from a retail location in one of the business sections of the city, outlying from the main central business

district. His business is comprised of contracting and the retail sale of fixtures and household appliances. Approximately one half of his volume is contracting and the other half is sales from the store.

He has been established in business ten years. Because of vacancies in the office force necessity for a new book-keeping system was very evident, and upon the recommendation of Mr. Herzberg, secretary of the Milwaukee Electrical Contractor-Dealers Association, the auditor employed by the association called upon Mr. A, and interested him in the installation of the Standard Accounting System.

Executives of jobbers were unanimous in their recommendations for the installation of an accounting system. and their recommendations were considered seriously. The entire cost of installing this system was assumed by A

The cost for installing the system was approximately \$100, which outlay was represented by a cost of \$50 for bringing accounts up to date, and the additional \$50 represented the cost of supplies and installing the new system.

Comments from Mr. A in reference to the operation of the system: The best in the world. Up to the present time I have been working in the dark, and now that I realize the benefits received, regret that I did not adopt the system five years ago.

"Any expense in connection with the operation of this system is well spent, and the investment shows most satisfactory returns. In the installation of this system, I uncovered accounts due me amounting approximately to \$500, which due to careless methods, I had lost entire track of. This one item alone, which has since been collected, more than pays the entire cost of intellection.

"The biggest benefit in my opinion resulting from the installation of this system, is the fact that I am able to know at any time the amount of work in progress, which represents both labor and material. This enables me to follow up all jobs closely in an effort to complete work, so that my accounts are in shape to collect. Collections too are given more thought and attention by me, and I realize now that the more closely collections are followed up, the easier they are to collect, and also the easier it is to retain the customer's goodwill.

"The approximate volume of our business is \$100,000 annually, and last

month and since installing this system we made \$1700 net, which is practically the first time in my busniess career that I have been able to tell what I have made, either by the month or the year."

Firm B

Firm B is a contractor-dealer, operating from a store in one of the outlying business districts, and equipped to do house wiring and contracting. Also equipped to retail all electrical merchandise from a store location. Approximately eighty percent of his volume is contracting, and twenty percent sales. B has been established in business three years.

The general publicity given during the campaign and the auditor's efforts were responsible for Mr. B adopting the accounting system. The jobbers' executives as well as the jobbers' salesmen coöperated. The entire cost of installing this system was assumed by B.

The cost of installing the system was approximately \$100, which included closing up the old books and installing the new system. Comments from Mr. B in reference to the operation of the system: "The advantage I have found in employing the Standard Accounting System is that it enables us to refer to past records when estimating on additional work of a similar character. I have found such records particularly advantageous, and since the installation of this system I have not had a loss on a single job that we have bid on, and have found that our prices have increased so as to cover all items of overhead, which we are now entirely familiar with.

"Previously we knew the affairs of our business each year, and that was after our annual inventory had been taken, but with our present system I am able to know practically daily the condition of our affairs, and we have a trial balance at the end of each month and a complete balance sheet, which is always available to us by the fifth of each month, and never later than the tenth.

"The approximate volume of our business is \$35,000 annually, and last month showed us a net profit of \$300."

Firm C

Firm C is a contractor-dealer, operating from a store removed from the downtown district, and they operate a retail store in connection with their contracting business. Approximately seventy-five percent of their business is contracting, and twenty-five percent retail sales. C has been established in



The Full Value of an Orderly Store is Not Always Appreciated. Can You Improve on the Arrangement of These Devices in the Establishment of the Krech Electric Company, Electragist of Milwaukee? The Genial Proprietor is Seen on the Right

business two years. C is one of the leaders of the present movement among contractor-dealers, and was in a measure responsible for the present movement.

The entire cost of installing this system was assumed by C. The cost for installing it was approximately \$150. It was higher than subsequent installations due to the fact that C was the pioneer in installing this system and the auditor, who is in the employ of the Electrical Contractor-Dealers, Association, was not at that time entirely familiar with such an installation.

Comments from Mr. C in reference to the operation of the system: "After a year's experience in business, resulting in a loss, we were finally convinced to install the Standard Cost Accounting System, after having had two other systems installed. For the first time in our history the business has netted us a profit. It is better than any other system.

"Prior to the installation of this system we have never been in a position to know where we stood financially. Since installing it we are in a position to get a definite statement of the business within two hours' time, including material on hand, accounts receivable, work in progress, etc.

"It enables us to know our cost on retail sales, as well as work in progress. Enables us to give a balance sheet to our supplier which has been a big help in securing the necessary credit to properly conduct our business. The approximate volume of our business is \$25,000 annually."

Firm D

Firm D is a contractor-dealer, operating from a retail location in one of the business sections of the city, outlying from the main central business d'strict. His business is approximately seventy-five percent contracting, and twenty-five percent sales from the store. He has been in business three years.

The general publicity given during the campaign was responsible for Mr. D adopting the Standard Accourting System. The jobbers' executives as well as the jobbers' salesmen coöperated. The entire cost of installing this system was assumed by D. The cost of installing it was approximately \$75.

Comments from Mr. D in reference to the operation of the system: "Very successful and satisfactory in every way. Would not be without it if it cost twice as much. The approximate volume of our business is \$75,000 annually."

From all the above interviews, you will notice that in each instance the entire expense of the installation was assumed by the contractor-dealer, and in each instance the contractor-dealer is entirely satisfied and feels that the expense is an excellent investment.

The auditor has a large number of prospects yet available for the installation of this system, and inasmuch as this campaign is going to be carried on actively, we feel that within a six months' period the situation in Milwaukee is going to show marked improvements from the standpoint of the contractor-dealer situation.

k

rt

ts

0

n

re

ur

io

tr

di

m

cı

\$2

re

di

do

of

ch

po

no

tu

on

m

sh

di

or

H

Power: How to Sell and Install It

BY WILLIAM J. SHORE

This Was the Subject of a Session at the Annual Convention of the A. E. I., and is Accompanied by Discussions from the Floor

By the term Power we refer to the application and use of electrical devices that transform electricity into mechanical energy or into heat energy and used in industrial plants. It comprises electric motors, electric welding transformers, electric static transformers, arc welders, electric furnaces, ovens and smelting furnaces. We may exclude entirely all lighting appliances, all telephone apparatus, all household devices, radio equipments and other apparatus too numerous to mention.

The stuff we intend to talk about goes into mills, factories, workrooms and railway shops and is used in the production of consumable goods. It is used for transforming materials from the raw, crude and primary stage into finished and usable goods, neatly boxed, packed or sacked ready to ship to the ultimate consumer—the people of the United States and the rest of the world.

It is a fascinating game, one which deals with motion, continuous and steady motion, where a failure of our apparatus blocks the game and holds up and impedes production.

Roughly speaking, ten percent of the electric wiring installed in this country is used in connection with power equipment

The rest, as far as electragists are concerned, is for home lighting, telephone work, radio, and sundry other things.

Thus to begin with, the field for power work is limited. Aside from this limitation, its other limits are mental. That is to say, for an electragist to follow this work he will have to like it, first of all—and secondly, he will have to have the necessary training and experience that will enable him to do this work properly and satisfactorily.

As we are limited for time, this paper can only cover the matter in a brief and sketchy manner, hence we will consider our introduction to this matter completed.

How to Sell Power

By this we understand the sale of a complete electric power equipment for an industrial plant including electric generators, motors and starting control, switch and panel boards and wiring

cretion as the better part of valor; and so he bided his time. He cringed inwardly when he considered the possibility of having to go before Mildred.

To begin with it would be well to consider the sources from whence this kind of work may be secured, as follows:

Consulting Engineers.

Architects.

Manufacturers of electrical machinery.

Manufacturers of machinery requiring electric drive.

Central Stations.

Friends and Acquaintances.

Recommendations from satisfied customers.

Building Reports.

Solicitation and Canvassing.



William J. Shore

The order in which these various agencies are listed is no measure of their relative efficacy. In the case of the first two, namely, Consulting Engineers and Architects, the electragist is usually given a set of plans and specifications and is told to prepare an estimate. In this event he has but little to do except follow the drawings and specifications and work up his proposal. There are occasions where the electragist has had considerable experience on certain classes of work where the architect or the consulting engineer takes advantage of this, and quite properly too, and usually accepts suggestions and recommendations which if good he incorporates into his plans and specifications.

Manufacturers of electrical machinery do not as a rule install and wire their own equipments and find it a convenient

to overflowing.

Burchard Stover had acquiesced readily to Mrs. Birdman's wishes re-

to their agents, or at times recommend two or three of their agents when a prospective customer asks for their advice regarding a suitable contractor to install proposed new equipment.

Manufacturers of machinery such as compressors, ice machines, wood working machinery, etc., very frequently find it necessary to secure the services of an electragist, in order that they may be able to submit a complete bid to their prospective customer covering the supply and installation of their machine equipped complete with motor, control and wiring.

Central Station Lends a Hand

Central stations are continually on the lookout for new customers. This includes outside industrial plants about to move into the territory they supply with power, it includes those who are manufacturing their own power either with steam engines, water power, oil engines and gas engines. In many cases the central station representative will be asked for an estimate covering a proposed installation, and as a matter of service he secures estimates from two or more reliable electragists whose reputation for such work is above question.

Our next source of supply is Friends and Acquaintances. This I might say is one of the most attractive methods of securing power business, as well as any other kind of business, and will prove eminently satisfactory provided your friends and acquaintances are of the right sort.

Recommendations from satisfied customers are without doubt the very best kind of leads. It has probably been everyone's experience as well as the writer's, that business secured through the recommendation of a satisfied customer is good profitable business and that jobs secured through that kind of recommendation usually make our work pleasant and profitable.

Building reports keep you posted on new work, but as a rule such jobs are secured only through the severest kind of competition.

Advertising will serve to make your entrance and point of contact somewhat easier and from time to time will result in work secured direct through this

is correct, you seem to have the habit of charging high for everything you do."
"Say!" he demanded, moving for-

By solicitation and canvassing is meant a factory to factory canvass-going from one factory to another and asking if there is an opportunity for doing electrical work. While to some this kind of work is distasteful, it is surprising what a lot of buisness and new customers may be secured in this fashion. As a matter of interest, the writer tried this and found that from two hundred twenty five calls made in one month, eight new customers were secured, with business amounting to \$2500, and that after a period of one year, renewal and additional business was obtained amounting to \$1000. It's an old fashioned method and it brings results; but it is quite tiring.

Requirements Essential

Having described the various sources through which this business may be obtained, it would be well to tell of some of the requirements essential to the contractor who wishes to compete for this business.

He must like machinery and such kinds of material.

He must know machinery and what it does.

He must be familiar with motors, the various kinds, with their special and individual characteristics.

He must be able to analyze the work done by machine and to determine just how much horsepower and what kind of horsepower is required.

He must not hesitate to ask the machine manufacturer how much horsepower his machine requires, and he must not hesitate to ask the motor manufacturer what type and size motor he recommends for the machine to be driven.

He must acquaint himself with all materials such as belting, gearing, shafting, and rope and chain drives.

He must then be able to analyze conditions so as to tell whether individual or group drive is best for the purpose. He must balance interest and maintenance of motor equipment against power rates to help him determine what is best.

After having thus prepared his proposal he must present it and then sell it to his customer completely.

In order to do this he must convince his customer that he

- 1. Know his business thoroughly.
- He is going to give him the very best quality of an installation for the price asked.
- 3. Is certain the installation will serve the

Now after having completed the first part of his transaction, which after all is the easiest task our electragist must prepare to install this equipment.

If he is following the plans and specifications of an architect or engineer, his responsibility is limited, provided he furnishes the materials demanded, installing them in the manner specified. If, however, he has prepared his own layout, things are much different.

He must be certain his motors have been properly selected, properly wired and properly installed.

Aside from the consideration that he has to satisfy his customers, there are other parties very much concerned in this matter, whose approval must be had under any and all circumstances.

Must Comply With Rules

The central stations that furnish the power have a great deal to say regarding arrangements for metering and regarding the character of the motors installed. Their rules are strict and they have the power to enforce them. They define certain limits for starting inrush currents of motors, and when the motors are up and installed, wired and running, they come around with their meters and run tests—and if motors do not come within the requirements the customer is requested to remove the motors from their lines or else suffer discontinuance of electric service.

Therefore the electragist should make absolutely certain before he ever suggests putting a motor in, that the motor will do the work and do it in accordance with all rules.

One great beauty and benefit of all

these rulings is that they apply to all alike.

If the installation of electric motors is run from the customer's own power plant, it is a good idea to follow the central station ruling, for two reasons. One, that the customer at any time may elect to take this service; two, that any excessive starting current will react at once on the engine and generator, causing drop in voltage and a lowered frequency which would affect the balance of the installation in a harmful manner.

Having complied with the central station requirements, the electragist now finds at hand the inspector of the National Board of Fire Underwriters, who also have rules and regulations bearing upon his work, and whose rules and regulations must be carried out precisely also.

It has been the writer's experience that a preliminary talk with these authorities regarding the manner and way in which he proposes to do his work, helps greatly. They are always ready to assist and to show how he can do his work to the best possible advantage of himself and his customer. These rules and regulations apply to one and all, and they set a high value on good materials and a high grade of workmanship.

Following these two supervisory authorities we still have another, namely, the municipal authorities. They also exercise jurisdiction over all electrical work done. Their inspections are local and with some exceptions follow the general tenor of those of the National Board of Fire Underwriters.



nabit of ou do."

By this we understand the sale of a complete electric power equipment for an industrial plant including electric generators, motors and starting control, switch and panel boards and wiring

cretion as the better part of valor; and so he bided his time. He cringed inwardly when he considered the possibility of having to go before Mildred's uncle and make a statement regarding his ability—or rather disability—to provide for her.

That dread of impending failure sapped his assurance and injected a note of uncertainty into his dealings with others that handicapped him severely. Lacking confidence in himself he could not command it in others. But Dame Fortune had still another test for this man to weather, although Carvel Blake had no premonition of its imminence as he sat in Attorney Stover's outer office waiting to see him regarding a wiring job for one of his clients.

However, when "Mickey" Dugan blustered in and dropped noisily into a vacant chair, greeting Blake with a friendly gesture qualified by a sharply questioning look, he wondered if his visit boded ill for his chances of getting business. He knew Dugan as an expugilist of no special ability who had drifted into the electrical field and was eking out a precarious existence by doing small wiring jobs at prices with which no man having ordinary business expenses could hope to compete. Dugan had taken work from Blake before and his presence there in the office at that time depressed him.

But the entrance of the girl to admit him to the inside office diverted his thoughts into other channels. Quite without conscious effort he found himself noting how far short this girl fell in comparison with Mildred Everton. Tall and somewhat angular, rather masculine features and brilliant blue eyes, taffy colored bobbed hair and mannerisms reminiscent of the cabaret and dance hall. She aroused in Blake a great thankfulness for the sweet seriousness and quaint little ways that added so much to the natural charm that Mildred exerted upon all she

Little did Blake realize that Mildred's aunt had preceded him into Burchard Stover's office just a little while before for the express purpose of enlisting Stover's services in establishing a definite barrier between himself and the girl. Could he have heard Mrs. Birdman and been present to note the look of anguish that accompanied her assurance to Stover that unless something was done her niece would disgrace the Emery family by marrying a mechanic, a man who put electricity in houses, his

ates into his plans and specifications.

Manufacturers of electrical machinery do not as a rule install and wire their own equipments and find it a convenient

to overflowing.

Burchard Stover had acquiesced readily to Mrs. Birdman's wishes regarding Blake, for he knew Mildred well and had long cherished the hope of marrying into the Emery family himself. Mrs. Birdman had hinted quite pointedly that she regarded him as an acceptable suitor. He hoped that she had not sensed his deception in addressing as "Mr. Brown," the waitress in the station restaurant with whom he had been conversing over the telephone arranging a clandestine meeting when she was unexpectedly ushered into his office. He would have to be very careful, he realized, in conducting such affairs in the future.

Fortunately for Blake, who was already somewhat upset by encountering Dugan, he knew nothing of this arraying of forces against him. Mrs. Jelray, one of Stover's clients, was having her house wired; Blake had solicited that business; she had referred him to Stover, her attorney. His thoughts were entirely concentrated upon the business at hand. He wanted the job but he realized even as he argued his fitness to do the work that his sales argument was weak—his words were hollow—they were just words.

Stover, tall and well formed, his aristocratic features marred by early signs of dissipation which made his age appear nearer forty than thirty, listened quietly at first, while Blake launched forth with a perfect torrent of words regarding his plans for doing the work. "Just a minute—just a minute," he interjected finally. "I haven't time to go into that now. How much—for a job such as you describe?"

"Why!" exclaimed Blake, "I'm not more than half through telling you what I'm going to do."

"Put it in writing; I'll read it at my leisure," insisted Stover. "How cheap? That's all I want to know now."

Rebelling inwardly but not knowing what else to say, he named his price, insisting that the figure mentioned would be for work of the highest quality. Stover made a note of the price, commenting as he did so that it was excessive. Then he startled Blake by changing the subject: "By the way," he said, looking impudently at Blake, "apropos of high prices, you are the man who helped my client, my client's niece, Miss Everton, the day she drove her car into the river, aren't you?"

"Yes, I helped M'ss Everton, but it wasn't any great feat."

"Quite so," agreed the lawyer.

Advertising will serve to make your entrance and point of contact somewhat easier and from time to time will result in work secured direct through this

is correct, you seem to have the habit of charging high for everything you do."

"Say!" he demanded, moving forward belligerently, "what are you driving at—that I charged Mildred, that is, Miss Everton, money for coming to her rescue?"

"No, not money," assured Stover, mollifyingly. "But, Blake, let me give you a b't of advice. Miss Everton will never say so, of course, and she'd probably be kind hearted enough to deny it even if you asked her; but the fact is, people in her own set and station in life consider that you are forcing yourself upon her, trading on the fact that you rendered her a little assistance. Her friends think you are asking a very big price for what you did. Take itf rom me, Blake, it won't help you any in business, not if her friends have any influence."

"Stop!" thundered Blake, too incensed to speak calmly. "I came here because Mrs. Jelray sent me. Leave my private affairs out; I didn't ask for advice and I don't want it," he concluded hotly.

"That's not advice," returned the lawyer in kind, "I charge for that. It's a warning," he went on, regaining his control as he talked. "A bit of friendly warning, you understand. Now take it calmly. You'll never marry Miss Everton; a better man, one in her own station intends doing that. So the sooner you forget her the better it will be for you and your business. Think of the lady," he urged soothingly, "and be generous. You can't support her the way she has been accustomed to living; do the manly thing and stop making her feel under lasting obligation to you. You said yourself that you didn't do more than any other fellow would have done the day you pulled her out of the river. I'm tremendously sorry, Blake," he concluded with a great show of good fellowship, "but we lawyers have to do many unpleasant things at times. You appreciate my position, I'm sure. Mail that estimate in to me today, won't you?" he concluded pleasantly, turning to the papers on his desk to indicate the interview was ended.

Too angry to find words, Blake realized dumbly the sorry figure he cut, standing speechless before the imperturbable Stover and not knowing how to depart without losing the remnants of self respect that remained to him. Twice he essayed to speak, but the words would not come. Vowing somehow to redeem himself he turned and strode out of the office.

(To be continued.)

Know his business thoroughly,

abit of u do." g foru drivthat is, to her

Stover, ne give

I probdeny it fact is, tion in z youract that ce. Her ery big om me, usiness,

ence."
oo inne here

Leave

ask for

e con-

ed the

ing his

riendly

w take

y Miss

er own So the

it will

Think

y, "and

her the

living; making

tion to

ı didn't

would her out sorry, it show lawyers ings at osition, to me l pleasis desk ded. ke realhe cut, imperng how mnants o him. out the someed and He is going to give him the very best quality of an installation for the price asked.

3. Is certain the installation will serve the

Expert Service Needed in Radio Retailing

Help Wanted! The radio branch of the electrical industry wants help. It is in need of Radio Engineer-Dealers. Apply at once to any distributor of radio supplies and equipment.

What is a Radio Engineer-Dealer? This question is answered in the pages that follow, and it behooves every live wire electragist to ponder it well.

Here's the chance—get in on the ground floor and be a Radio Engineer-Dealer. It pays well. And best of all, it is permanent; for beyond the shadow of a doubt the radio business has come to stay for all time. It is as permanent as the ether through which the wireless speeds.

The following article was prepared by one who has carefully studied the merchandising field of radio, as well as the capabilities of the electrical contractor-dealer. He sees a wonderful opportunity open to this branch of the electrical industry. He tells how to take advantage of this golden opportunity.

Every electragist should read this article and decide for himself whether or not he will make of himself a Radio Engineer-Dealer. If not, then let him encourage some of his capable kinsprits to apply for the job.

Radio Engineer-Dealers are in demand. Study the situation and see if you can fill the bill.

The Radio Engineer-Dealer

Great Field Open to Electrical Contractor-Dealers Who Capitalize on Live Opportunity of Expert Service

Out of the wild scramble of the first two years of the radio business there has emerged one of the largest and soundest businesses in the world. For 1923 the volume of radio equipment sold was second only to wire and cables among electrical materials manufactured. Authentic figures of forecasts for 1924 show a tremendously increasing market for radio devices of highest standards.

As in all industries which have developed through popular demand faster than normal channels of distribution can supply, the retailing of radio equipment has spread into every conceivable type of store and dealer. The scrambled, undirected methods of selling resulting from this, the cut price sales unloading bankrupt stocks, the competition of inferior lines of equipment thrown on the market by irresponsible manufacturers hastily organized to take advantage of the popular demand-all of these things have discouraged many electrical contractordealers who have tried to compete in merely "retailing" radio.

In its earlier stages retailing radio was largely the stocking of quantities of small parts for the schoolboy experimenter, with his small allowance, to buy piecemeal and put together. Oftentimes the sale of a part consumed many times its value in education of the buyer before he would complete the sale. Rapidly changing types of materials and almost overnight changing whims of the public as new ideas came to them through the radio supplements of every newspaper, drove frantic the dealers who were trying to carry radio parts.

Out of all this muddle, like a traffic jam at a congested corner, the traffic is straightening out and is ready to proceed in an orderly way, carrying increasingly greater volume through its orderliness. But from the jam the radio industry, manufacturers, jobbers and retailers, have learned some very definite facts and are planning the course of future arteries to handle the traffic. Complete radio sets have been developed that can be sold like a phonograph, and these are being standardized and brought up to the highest quality. The public has been educated to know that only high quality sets can give the greatest results, and the very

appeal of radio itself that calls for the owner of a set to want to pick up more and more remote stations is constantly increasing the demand for higher priced equipment.

One thing stands clearly in the minds of manufacturers and jobbers of radio equipment—there is a tremendous need of more electrical contractors and contractor-dealers handling radio. Every other line of retail store is offering its services to sell radio devices, but the electrical contractor has the advantage over them all if he will use it-technical knowledge of the customer's requirements and the ability to properly fill his needs. The radio manufacturers and jobbers are keenly alive to the need of this service and are looking to the electragists for the answer-but if it is not forthcoming retail distribution of radio will go more and more through other channels.

electrical contractor-dealer Every should consider this problem carefully. and then survey his own field for his opportunity to capitalize on his own particular advantage over other retail stores. He should consult his jobber and lay his case before the jobber to see if he has analyzed it right or completely. And when he finds his opportunity he should lay out a program for his radio sales along the definite lines in which he has unique advantage and get his share of the enormous radio business which will be done each year. Unless he does these things he cannot complain if distribution of radio goes through other channels.

Such a survey will probably show the electrical contractor-dealer several things.

First, he cannot compete with the 5 and 10 cent stores and chain stores in the sale of small parts—nor should he try to as the basis of his radio business. The 5 and 10 cent store is organized to give a cheap sale at a very small profit—and nothing more. That is their service and they do it well. It is folly for the electrical contractor-dealer to try to cheapen his service to compete with them.

Second, he cannot compete with the cut price store handling inferior goods, bankrupt stocks and questionable makes of equipment—nor should he try to, for the very competition of this class

of business leaves nothing for his efforts, and his greatest assets, technical service and responsibility, are lost sight of.

Third, there is a constantly increasing demand for complete radio sets, up to the highest priced instruments to be had in cabinets of finest workmanship. This business calls for real salesmanship; it means unit sales of hundreds of dollars each with gross margins greater in proportion to the sales effort than much of his other business; and it means a new point of contact with customers in his community of utmost value to him.

Fourth, and most important, there is a very great need today for more intelligent selling of radio equipment, requiring just the technical knowledge of electrical problems that he possesses. The highest priced radio set may not give the customer satisfaction if improperly set up; if aerials are too long or too short; if the relation to other wires, foliage, etc., is wrong; if it is improperly grounded; or if that particular type of equipment is unsuited to his conditions or the use he plans to make of it. In all of this the electrical contractor is especially fitted to give service-his greatest asset.

Having found from his survey that there is a real opportunity for him for increased business in the radio field, the electrical contractor should lay down a definite program, with well charted lines to follow and principles from which he will not depart. They should include these fundamentals:

First, that he handle only well established makes of equipment of the most reputable manufacturers through regular distributors.

Second, that he is not a radio dealer—he is a radio engineer-dealer, and that as such he has more than a radio device to sell his customer, and salesmanship of his service must be developed to the utmost.

Third, that the basis of his business must be complete sets, but no sale shall be made until the customer's requirements are thoroughly known and the conditions under which it is to be used are established.

Fourth, that installation of equipment, erection of aerials, grounding, etc., which is the technical service he

his efchnical e lost

No. 4

nereasets, up
s to be
anship.
esmanindreds
nargins
s effort
and it
ith cusutmost

here is ore inent, reedge of ssesses.
eav not
if imoo long
o other
if it is
at parnsuited
e plans
ne elecetted to

ey that
him for
o field,
lld lay
h well
inciples
They
lls:
l estabhe most
h regu-

dealer er, and a radio d salesbe de-

business ale shall requireand the be used

equipounding, ryice he sells his customer, shall be a profitable part of his business. The electrical contractor who fully develops this side of his radio business may well term himself an "antenna engineer"—a branch of radio engineering with great possibilities.

The radio engineer-dealer needs to study and develop himself along lines of greater salesmanship—a development that will reflect itself in every department of his business. He needs to understand his customers, the psychology of their desire for radio in their home, to be installed in their living room with high grade furniture, alongside a thousand dollar piano (and for the same purpose, the aesthetic entertainment of his family and his guests).

Recently a prominent business man living in a \$25,000 home, and driving a Cadillac car, went into a dealer's store to buy a radio set. He was sold a \$75 set, and knowing nothing of radio, supposed he was getting what he wanted, as it was made by a manufacturer of high standing and he was assured by the dealer it was a fine equipment. It was—and so is a Ford car, but the firm of auto dealers who tried to sell that man a Ford when he ought to have a Cadillac would lose his business forever, for he understands cars.

Today this man knows his \$75 radio set was sold to him by a dealer who did not serve his needs. The set was out of place in his home where he had a pride in his furniture; it was limited in its radius and meant apologies to his guests which spoiled his pleasure in what it could do; it was a Ford while he drives a Cadillac. And today he has thrown out the first set and installed a \$350 instrument through a radio engineer-dealer who knew what he required.

Margins of discounts have improved as manufacturers have studied the needs for retailing until today the retail dealer can average 33½ percent on

highest grade equipment, and on some lines requiring installation at the home of a unit selling for over \$200 the margin to the radio engineer-dealer is 40 percent. How many electrical contractors take house wiring jobs of less than \$200 on margins of less than 40 percent.

The contact with the community in building up a valuable trade for the contractor-dealer's store, the pulling power for customers, the goodwill established, the increased volume of business—all of these are additional profits from the sale of radio equipment plus service. But most important for the electrical contractor-dealer to consider is the tremendous field for him today for profitable business in specialized radio selling service—and that the industry is looking to the electragists to give that service.

Survey your situation at once; talk it over with your jobber; lay out your program for 1924; and become a radio engineer-dealer.

Business and Recreation Happily Combined

A. E. I. Plans 1924 Convention at West Baden Springs, Indiana, Next September

The Association of Electragists—International is planning for its 1924 Convention, which is to be held the week of September 29th to October 4th, a complete departure from the usual custom of going to a large city. Arrangements have been completed for taking over the West Baden Springs Hotel at West Baden, Indiana, with all of its hundreds of acres of grounds and attractions as the mecca for the electragists' meeting.

West Baden Springs is located just south of Indianapolis, and is about an equal distance from Indianapolis, Louisville, Cincinnati, Evansville and Terre Haute. Only a few miles from the hotel is the United States Government marker locating the exact center of population of the United States.

The splendid roads throughout all of that territory will undoubtedly bring a large number of convention delegates by automobile from many of the surrounding states. There is ample provision on the grounds of the hotel for parking over two hundred cars under cover without charge, and the service garage can handle fifty cars at a very

nominal cost. Reduced rates on the railroads are being arranged for from all points.

This convention will be unique in many ways as an electragists conclave. The slogan of the convention, "Business and Recreation Happily Combined," expresses the spirit that is planned for the week.

All of the facilities of the great hotel, which has accommodations for twelve hundred guests, will be turned over to the electragists for the week, including the use of the sporty nine hole golf course, and all the tennis courts, bowling alleys, and other recreation attractions. The rates at the hotel, which is American plan entirely, are very reasonable. Comfortable accommodations are available, including all meals and other charges, as low as \$7 per day, and the highest cost is limited to \$10 per day. It is expected to make the registration fee \$5, so that this 1924 convention with all of its many unusual attractions can be enjoyed by electragists at a lower cost than would prevail in any large city.

One of the distinctive features of this convention will be the gathering



The wonderfully laid out grounds with the beautiful hotel in the distance where the next annual A. E. I. Convention is to be held.

All forms of sport are afforded and there are many features of this year's meeting in addition to the carefully planned business sessions which will attract electrical contractor-dealers from all parts of the United States and Canada

of all of the delegates under one roof, eating all of their meals together in the great dining room that can serve six hundred people at one time, and all sharing in the well balanced program of Business and Recreation that will make for deeper friendship and better understanding among all who attend.

It is planned to devote each morning to business sessions of the convention with programs of unusual interest to the electragist. The afternoons will all be given over to organized sports. and no finer opportunity exists in the country for each one to enjoy the particular sport which appeals to him. The evenings will have short sessions of business enlivened with special features and followed each night by dancing in the great inner court of the hotel known as the Pompeian Room, one of the most remarkable rooms in the world and with a spacious charm that makes it one of the great attractions of the hotel.

The many unusual features of the West Baden Springs Hotel and its extensive grounds, located in the heart of the famous Lost River Valley, makes this 1924 convention of the electragists a real vacation appeal to the electrical contractor-dealers to bring their families for a week of real enjoyment. Special programs of sports will be arranged for the ladies, and for those who do not care to play golf or tennis, or go on the many delightful walks through the hills, there will be other features such as afternoon teas at the club house and opportunities for unusual auto trips to the many famous points nearby.

No finer week in the year could have been selected than the early days of October for this convention at West Baden Springs. Already keen interest is being shown by electragists throughout the country towards making this one of the greatest conventions they have ever held.

The convention program is being planned to give the delegates attending a real forum for the exchange of the best thinking on their problems, and no better investment of time and money can be made by the electragist than to set aside that week of th's year to join with his fellow electragists in such a program of business and recreation combined.

The Factor That Determines Profit or Loss

By F. W. GREUSEL

Why Proper Accounting is Vital is Shown by President, G-Q Electric Co., Milwaukee, in Giving Results of Campaign in That City

In connection with the campaign conducted by the Milwaukee jobbers to promote the installation of proper accounting systems in the business of electrical contractor-dealers and thereby prove the value of correct bookkeeping methods in determining the question of profit or loss at inventory time, I have called personally on a number of local contractor-dealers who have adopted accounting sets as the result of this movement.

All of these concerns have been operating for some time, and I was familiar with the organizations before the new accounting systems were adopted. The changes, however, which have taken place in the morale of the individuals as well as the general atmosphere surrounding the business since the installation of proper bookkeeping methods was so apparent that I was greatly and pleasantly surprised. There seems to be a feeling of confidence existing among the executives which was lacking previously.

In every instance those interviewed were anxious and desirous that their competitors who are not employing uptodate accounting systems should realize their importance and value, and were hopeful that even the smallest contractor-dealer engaged in the business should have some kind of approved set. I am frank to say that I have confidence in the future of the electrical contractor-dealers in this city if they will abide by proper bookkeeping.

Below is the result of the interviews made and each dealer interviewed will be named by the letters A, B, C, and D. The answers in each case are significant of the questions asked and it is believed that they show the value of the campaign conducted:

Firm A

Firm A is a contractor-dealer, operating from a retail location in one of the business sections of the city, outlying from the main central business

district. His business is comprised of contracting and the retail sale of fixtures and household appliances. Approximately one half of his volume is contracting and the other half is sales from the store.

He has been established in business ten years. Because of vacancies in the office force necessity for a new book-keeping system was very evident, and upon the recommendation of Mr. Herzberg, secretary of the Milwaukee Electrical Contractor-Dealers Association, the auditor employed by the association called upon Mr. A, and interested him in the installation of the Standard Accounting System.

Executives of jobbers were unanimous in their recommendations for the installation of an accounting system. and their recommendations were considered seriously. The entire cost of installing this system was assumed by A.

The cost for installing the system was approximately \$100, which outlay was represented by a cost of \$50 for bringing accounts up to date, and the additional \$50 represented the cost of supplies and installing the new system.

Comments from Mr. A in reference to the operation of the system: The best in the world. Up to the present time I have been working in the dark, and now that I realize the benefits received, regret that I did not adopt the system five years ago.

"Any expense in connection with the operation of this system is well spent, and the investment shows most satisfactory returns. In the installation of this system, I uncovered accounts due me amounting approximately to \$500, which due to careless methods, I had lost entire track of. This one item alone, which has since been collected, more than pays the entire cost of installation.

"The biggest benefit in my opinion resulting from the installation of this system, is the fact that I am able to know at any time the amount of work in progress, which represents both labor and material. This enables me to follow up all jobs closely in an effort to complete work, so that my accounts are in shape to collect. Collections too are given more thought and attention by me, and I realize now that the more closely collections are followed up, the easier they are to collect, and also the easier it is to retain the customer's goodwill.

"The approximate volume of our business is \$100,000 annually, and last 3, No. 4

rised of

of fix-

s. Ap-

lume is

is sales

ousiness

in the

v book-

nt, and

r. Herz-

ee Elec-

c'ation,

associa-

terested

tandard

unani-

for the

system.

re con-

cost of

med by

system

outlay

850 for

and the

cost of

system.

eference

: The

present

e dark.

efits re-

opt the

vith the

l spent,

t satis-

tion of

nts due

s \$500,

I had

e item

llected,

of in-

opinion

of this

able to

f work

oth la-

me to

n effort

ecounts

ons too

tention

e more

up, the

lso the

tomer's

of our

nd last

month and since installing this system we made \$1700 net, which is practically the first time in my busniess career that I have been able to tell what I have made, either by the month or the year."

Firm B

Firm B is a contractor-dealer, operating from a store in one of the outlying business districts, and equipped to do house wiring and contracting. Also equipped to retail all electrical merchandise from a store location. Approximately eighty percent of his volume is contracting, and twenty percent sales. B has been established in business three years.

The general publicity given during the campaign and the auditor's efforts were responsible for Mr. B adopting the accounting system. The jobbers' executives as well as the jobbers' salesmen coöperated. The entire cost of installing this system was assumed by B.

The cost of installing the system was approximately \$100, which included closing up the old books and installing the new system. Comments from Mr. B in reference to the operation of the system: "The advantage I have found in employing the Standard Accounting System is that it enables us to refer to past records when estimating on additional work of a similar character. I have found such records particularly advantageous, and since the installation of this system I have not had a loss on a single job that we have bid on, and have found that our prices have increased so as to cover all items of overhead, which we are now entirely famil-

"Previously we knew the affairs of our business each year, and that was after our annual inventory had been taken, but with our present system I am able to know practically daily the condition of our affairs, and we have a trial balance at the end of each month and a complete balance sheet, which is always available to us by the fifth of each month, and never later than the tenth.

"The approximate volume of our business is \$35,000 annually, and last month showed us a net profit of \$300."

Firm C

Firm C is a contractor-dealer, operating from a store removed from the downtown district, and they operate a retail store in connection with their contracting business. Approximately seventy-five percent of their business is contracting, and twenty-five percent retail sales. C has been established in



The Full Value of an Orderly Store is Not Always Appreciated. Can You Improve on the Arrangement of These Devices in the Establishment of the Krech Electric Company, Electragist of Milwaukee? The Genial Proprietor is Seen on the Right

business two years. C is one of the leaders of the present movement among contractor-dealers, and was in a measure responsible for the present movement.

The entire cost of installing this system was assumed by C. The cost for installing it was approximately \$150. It was higher than subsequent installations due to the fact that C was the pioneer in installing this system and the auditor, who is in the employ of the Electrical Contractor-Dealers, Association, was not at that time entirely familiar with such an installation.

Comments from Mr. C in reference to the operation of the system: "After a year's experience in business, resulting in a loss, we were finally convinced to install the Standard Cost Accounting System, after having had two other systems installed. For the first time in our history the business has netted us a profit. It is better than any other system.

"Prior to the installation of this system we have never been in a position to know where we stood financially. Since installing it we are in a position to get a definite statement of the business within two hours' time, including material on hand, accounts receivable, work in progress, etc.

"It enables us to know our cost on retail sales, as well as work in progress. Enables us to give a balance sheet to our supplier, which has been a big help in securing the necessary credit to properly conduct our business. The approximate volume of our business is \$25,000 annually."

Firm L

Firm D is a contractor-dealer, operating from a retail location in one of the business sections of the city, outlying from the main central business district. His business is approximately seventy-five percent contracting, and twenty-five percent sales from the store. He has been in business three years.

The general publicity given during the campaign was responsible for Mr. D adopting the Standard Accounting System. The jobbers' executives as well as the jobbers' salesmen coöperated. The entire cost of installing this system was assumed by D. The cost of installing it was approximately \$75.

Comments from Mr. D in reference to the operation of the system: "Very successful and satisfactory in every way. Would not be without it if it cost twice as much. The approximate volume of our business is \$75,000 annually."

From all the above interviews, you will notice that in each instance the entire expense of the installation was assumed by the contractor-dealer, and in each instance the contractor-dealer is entirely satisfied and feels that the expense is an excellent investment.

The auditor has a large number of prospects yet available for the installation of this system, and inasmuch as this campaign is going to be carried on actively, we feel that within a six months' period the situation in Milwaukee is going to show marked improvements from the standpoint of the contractor-dealer situation.

Power: How to Sell and Install It

By WILLIAM J. SHORE

This Was the Subject of a Session at the Annual Convention of the A. E. I., and is Accompanied by Discussions from the Floor

By the term Power we refer to the application and use of electrical devices that transform electricity into mechanical energy or into heat energy and used in industrial plants. It comprises electric motors, electric welding transformers, electric static transformers, arc welders, electric furnaces, ovens and smelting furnaces. We may exclude entirely all lighting appliances, all telephone apparatus, all household devices, radio equipments and other apparatus too numerous to mention.

The stuff we intend to talk about goes into mills, factories, workrooms and railway shops and is used in the production of consumable goods. It is used for transforming materials from the raw, crude and primary stage into finished and usable goods, neatly boxed, packed or sacked ready to ship to the ultimate consumer—the people of the United States and the rest of the world.

It is a fascinating game, one which deals with motion, continuous and steady motion, where a failure of our apparatus blocks the game and holds up and impedes production.

Roughly speaking, ten percent of the electric wiring installed in this country is used in connection with power equipment.

The rest, as far as electragists are concerned, is for home lighting, telephone work, radio, and sundry other things.

Thus to begin with, the field for power work is limited. Aside from this limitation, its other limits are mental. That is to say, for an electragist to follow this work he will have to like it, first of all—and secondly, he will have to have the necessary training and experience that will enable him to do this work properly and satisfactorily.

As we are limited for time, this paper can only cover the matter in a brief and sketchy manner, hence we will consider our introduction to this matter completed.

How to Sell Power

By this we understand the sale of a complete electric power equipment for an industrial plant including electric generators, motors and starting control, switch and panel boards and wiring materials. To begin with it would be well to consider the sources from whence this kind of work may be secured, as follows:

Consulting Engineers.

Architects.

Manufacturers of electrical machinery.

Manufacturers of machinery requiring elec-

Central Stations.

Friends and Acquaintances.

Recommendations from satisfied customers.

Advertising.

Building Reports.

Solicitation and Canvassing.



William J. Shore

The order in which these various agencies are listed is no measure of their relative efficacy. In the case of the first two, namely, Consulting Engineers and Architects, the electragist is usually given a set of plans and specifications and is told to prepare an estimate. In this event he has but little to do except follow the drawings and specifications and work up his proposal. There are occasions where the electragist has had considerable experience on certain classes of work where the architect or the consulting engineer takes advantage of this, and quite properly too, and usually accepts suggestions and recommendations which if good he incorporates into his plans and specifications.

Manufacturers of electrical machinery do not as a rule install and wire their own equipments and find it a convenient and handy matter to turn inquiries over to their agents, or at times recommend two or three of their agents when a prospective customer asks for their advice regarding a suitable contractor to install proposed new equipment.

Manufacturers of machinery such as compressors, ice machines, wood working machinery, etc., very frequently find it necessary to secure the services of an electragist, in order that they may be able to submit a complete bid to their prospective customer covering the supply and installation of their machine equipped complete with motor, control and wiring.

Central Station Lends a Hand

Central stations are continually on the lookout for new customers. This includes outside industrial plants about to move into the territory they supply with power, it includes those who are manufacturing their own power either with steam engines, water power, oil engines and gas engines. In many cases the central station representative will be asked for an estimate covering a proposed installation, and as a matter of service he secures estimates from two or more reliable electragists whose reputation for such work is above question.

Our next source of supply is Friends and Acquaintances. This I might say is one of the most attractive methods of securing power business, as well as any other kind of business, and will prove eminently satisfactory provided your friends and acquaintances are of the right sort.

Recommendations from satisfied customers are without doubt the very best kind of leads. It has probably been everyone's experience as well as the writer's, that business secured through the recommendation of a satisfied customer is good profitable business and that jobs secured through that kind of recommendation usually make our work pleasant and profitable.

Building reports keep you posted on new work, but as a rule such jobs are secured only through the severest kind of competition.

Advertising will serve to make your entrance and point of contact somewhat easier and from time to time will result in work secured direct through this medium.

No. 4

nmend hen a eir adctor to uch as

workly find of an ay be their e supachine

ndon the is inabout upply

ontrol

o are either r, oil many tative ring a matter m two

e repestion. riends say is ds of as any prove your

of the d cusy best been s the rough d cuss and

work ed on s are kind

nd of

ewhat result this

By solicitation and canvassing is meant a factory to factory canvass-going from one factory to another and asking if there is an opportunity for doing electrical work. While to some this kind of work is distasteful, it is surprising what a lot of buisness and new customers may be secured in this fashion. As a matter of interest, the writer tried this and found that from two hundred twenty five calls made in one month, eight new customers were secured, with business amounting to \$2500, and that after a period of one year, renewal and additional business was obtained amounting to \$1000. It's an old fashioned method and it brings results; but it is quite tiring.

Requirements Essential

Having described the various sources through which this business may be obtained, it would be well to tell of some of the requirements essential to the contractor who wishes to compete for this

He must like machinery and such kinds of material.

He must know machinery and what it does.

He must be familiar with motors, the various kinds, with their special and individual characteristics.

He must be able to analyze the work done by machine and to determine just how much horsepower and what kind of horsepower is required.

He must not hesitate to ask the machine manufacturer how much horsepower his machine requires, and he must not hesitate to ask the motor manufacturer what type and size motor he recommends for the machine to be driven.

He must acquaint himself with all materials such as belting, gearing, shafting, and rope and chain drives.

He must then be able to analyze conditions so as to tell whether individual or group drive is best for the purpose. He must balance interest and maintenance of motor equipment against power rates to help him determine what

After having thus prepared his proposal he must present it and then sell it to his customer completely.

In order to do this he must convince his customer that he

- 1. Know his business thoroughly.
- 2. He is going to give him the very best quality of an installation for the price asked.
- 3. Is certain the installation will serve the

Price after that is only a secondary consideration.

Now after having completed the first part of his transaction, which after all is the easiest task, our electragist must prepare to install this equipment.

If he is following the plans and specifications of an architect or engineer, his responsibility is limited, provided he furnishes the materials demanded, installing them in the manner specified. If, however, he has prepared his own layout, things are much different.

He must be certain his motors have been properly selected, properly wired and properly installed.

Aside from the consideration that he has to satisfy his customers, there are other parties very much concerned in this matter, whose approval must be had under any and all circumstances.

Must Comply With Rules

The central stations that furnish the power have a great deal to say regarding arrangements for metering and regarding the character of the motors in-Their rules are strict and they have the power to enforce them. They define certain limits for starting inrush currents of motors, and when the motors are up and installed, wired and running, they come around with their meters and run tests-and if motors do not come within the requirements, the customer is requested to remove the motors from their lines or else suffer discontinuance of electric service.

Therefore the electragist should make absolutely certain before he ever suggests putting a motor in, that the motor will do the work and do it in accordance with all rules.

One great beauty and benefit of all

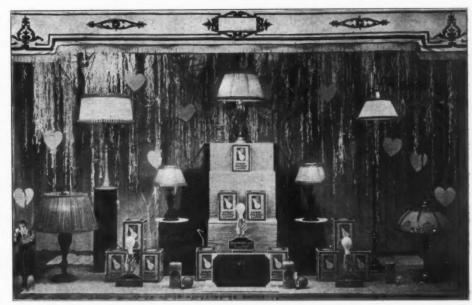
these rulings is that they apply to all alike.

If the installation of electric motors is run from the customer's own power plant, it is a good idea to follow the central station ruling, for two reasons. One, that the customer at any time may elect to take this service; two, that any excessive starting current will react at once on the engine and generator, causing drop in voltage and a lowered frequency which would affect the balance of the installation in a harmful manner.

Having complied with the central station requirements, the electragist now finds at hand the inspector of the National Board of Fire Underwriters, who also have rules and regulations bearing upon his work, and whose rules and regulations must be carried out precisely also.

It has been the writer's experience that a preliminary talk with these authorities regarding the manner and way in which he proposes to do his work, helps greatly. They are always ready to assist and to show how he can do his work to the best possible advantage of himself and his customer. These rules and regulations apply to one and all, and they set a high value on good materials and a high grade of workmanship.

Following these two supervisory authorities we still have another, namely, the municipal authorities. They also exercise jurisdiction over all electrical work done. Their inspections are local and with some exceptions follow the general tenor of those of the National Board of Fire Underwriters.



Here's a Valentine Day Trim Conceived by that Display Expert of Experts, E. F. New-kirk of the Edison Lamp Works. Try It Out and See if Your Lighting Business Doesn't Perk Up at Once

Generally they inspect the work and pass satisfactorily upon it if all requirements are met.

Planning Wiring Layout

Having taken into consideration all the limitations and provisions made by the three aforesaid authorities, our electragist is now in a position to begin to look over the work he has to do and to plan a wiring layout to conform with all of the requirements.

If he is of the restless and enterprising type, he will take his job and sleep on it. That is to say, he will work out various combinations of feeders, sub feeders, feeder panels, distribution power panels, motor locations, switch and starter locations, so as to give his customer the best possible job and for himself to use the least labor and material.

He will get prices on various materials used in various combinations. He will perhaps spend more money on materials so that he can save on laboror perhaps he will put in more labor so as to reduce his costs of materials. All the while though remembering that the customer is entitled to the best kind of a job. Where he might cut down to a fine point and depend on the time lag of a fuse, he will decide to put in the next larger size and be dead sure he is right. Sometimes he might even think of depending on his motor overload capacity, and on second thoughts will decide to use the next larger size.

Having given due consideration and thought to the matter of conforming to the requirements of the various boards having jurisdiction over this affair, the electragist is now in a position where he can commence to lay out his work.

He must always bear in mind the fact that only after his work is entirely consummated and in operation can he know for sure that everything is as it should be or should not be. And not until he receives approval from all the various bureaus of inspection can he rest comfortably with the assurance that nothing remains to be done except collect the unpaid balance of the account due him.

These three factors are by far the most important ones:

- 1. An ample amount of horsepower.
- 2. Proper and sufficient motor starting torque.
- 3. Proper transmission design and equipment.

If these three conditions have been properly complied with, the balance of the work such as motor installation and wiring is a secondary and minor matter.

If the horsepower installed is not sufficient, it means that it will be necessary to replace the motor or motors and at the same time install heavier wiring for the additional equipment.

If our starting torque is not ample, it means a replacement of the motor with one of different type.

If our transmission material is not sufficiently heavy and substantial to transmit the required horsepower, it means replacement either of the motor, the belting, chains or gears.

Keep Down Additional Cost

In any power installation anyone of these changes may be necessary. In most cases the customer will refuse to pay for the additional expense involved and the loss will fall upon the contractor.

In most of these instances it is impossible under ordinary conditions to make exact tests. They can be made but the expense is prohibitive.

The writer has known of an instance where a consulting engineer had the following clause in his specification, which is rather interesting and somewhat to the point: "In the event that the motors previously specified are not large enough to do the work required, the contractor will be obliged to replace them with larger ones of proper size without extra expense to the owner."

That is what I call playing both ends to the middle. Therefore in conclusion it would be well to bring out and emphasize these points:

It is always far better to have an excess of horsepower rather than an insufficiency. Where in doubt about starting torque do not hesitate to recommend and install compound wound or slip ring motors.

On transmission matters do not exceed pulley ratios recommended by good practice or certain horsepowers and speeds. When using chain drives, stick to the manufacturer's specifications. When using gears, let the gear manufacturer advise you and accept his recommendations.

If the electragist desires to enter the field of power installation, let him go carefully and slowly. The matter of motor installation and wiring is secondary to the question of proper selection of motor and transmission equipment.

Your customer as a rule knows little or nothing about this matter and where properly approached and sold, leaves the matter entirely in your hands. If things do not operate properly the re-

sponsibility is entirely up to the electragist who will have to make good,

Therefore in closing I might state a motto, well worth remembering and most particularly apt to this matter, and that is: "Be sure you're right—then go ahead."

Discussion From the Floor

CHAIRMAN SHORE: Gentlemen, is there any discussion of this matter?

Mr. J. A. Fowler, Memphis: Mr. Shore, you perhaps are familiar with the fact that we are planning to put a section in our Electragists' Data Book on the subject of power motors and facts concerning their installation, and how to find trouble on motor and power installations.

A large number of our members—more than half of them—do not specialize in power work, but of necessity have to have some connection with it, and find themselves from time to time confronted with demands from their customers in relation to such matters, and it is our wish to put into this Data Book a section on power that will be for ready reference to that type of contractor.

reference to that type of contractor.

Will you feel inclined to say what you think ought to go into that section of the book—just a sketch of what would be a desirable makeup for the power section of the

CHAIRMAN SHORE: Well, a book of that character would be difficult to compress into a very small space. Are you limited in space?

Mr. Fowler: I should say to twenty five

CHAIRMAN SHORE: I feel that in a case of that kind it would be unwise to try to illustrate any motor applications, except to give some general rules that will apply to the different types of motors and their various starting characteristics. As far as the application of a motor to a certain machine is concerned, it is really more up to the manufacturer of the machine, or the motor manufacturer, to advise the contractor.

I know there are two large motor manufacturing concerns that have an exceptionally good amount of data on that subject, and I have always found them very ready and willing to furnish that information to those need-

I believe that something like that could be done very readily, as far as the wiring is concerned.

Mr. Fowler: As you are right there in New York, I would like to ask you if you would have any objection to working with Mr. Davis in compiling that section of the book. We have already made some headway with it.

CHAIRMAN SHORE: Certainly not.
MR. LOUIS KALISCHER, Brooklyn, N. Y.:
Mr. Chairman, I don't know whether to congratulate you or to congratulate the International Association on having started the ball

rolling in this matter.

The company that I represent is essentially a power installation company. We confine our business wholly to that class of work.

If it were not such a serious matter I would say that it amused me very much to hear you say some of the things that the contractor, or the electragist, must do or must not do, and what he must like; and I agree with everything you said, but I am not unmindful of the fact that the companies furnishing the apparatus are still of the belief that the contractor performs no function, and that the major companies still seek to sell their apparatus direct to the customer, although in all cases they are our customers. We are called in when there are mistakes made, or oversights occur—to be charitable at least—

No. 4

e elecod.

state a

g and

er, and hen go

there

Shore. in our

ject of neir in-motor

power

a Book

ready

at you

of the

a deof the

of that ss into

ty five

try to

r vari-as the

achine man-

manunufacionally and I

uld be s con-

if you with of the head-

Y.:

terna-e ball tially

·k. would ntract not with ndful g the

con-

h in

are le, or ast-

some s from s from where the motor doesn't function properly, due to improper selection or to inadequate knowledge of the conditions under which the

motor is to operate.

I could cite twenty five different cases where the contractor was not considered in the sale of the apparatus—the company said he performed no function—and yet the motors were absolutely wrong for the work they were intended to do.

In one case right in New York, where the

question of speed was of very great impor-tance on loom work where the requirements were that the looms run at an absolutely constant speed—and while my customer had a D. C. plant of sufficient size and of high enough efficiency to operate all the looms that he desired to install—at the request of the manufacturer of the looms, A. C. motors were installed. The company that sold these motors to our customer—we not knowing anything about it-furnished two phase, sixty cycle motors, where three phase, and sixty two and a half cycles were called for, making a difference of some four and a half percent

we didn't secure any profit whatsoever on the installation of these motors, and we checked up on the mistake and sent the motors back and got new motors and reinstalled them on a percentage basis for our time. Yet the customer was told distinctly by the manufacturer who sold the original otors to him that we had performed no

It may be very well to say what the contractor must know, and what he must do, in these matters, but it is also important to remember that there is absolutely no opportunity for his receiving any compensation for being the man on the job.

being the man on the job.

There is one other point that I think should be emphasized and that is that where there is a question of doubt as to the size of the motors to be installed, you should put in a larger size motor than the one selected. On larger size motor than the one selected. On large installations of course the question of power factor must be considered. Otherwise it is only a question of a short time when our customers, or our clients if you please, will be penalized for poor power factors, and it is very, very essential that we go very care-fully into that and make a series of tests fully into that, and make a series of tests

before installation.

As I have said, I don't think the electragists who function in power work get proper compensation or recognition from the big companies manufacturing motors. I don't think that we have received all the consideration that we are entitled to, and I think that if the have received against any documents. if the International Association can do any-thing at all, it can remove some of the bar-riers that electragists and fairly good or-ganizations must hurdle in order to function in this field.

CHAIRMAN SHORE: I thank you very much, fr. Kalischer, for your remarks. I think Mr. Kalischer, for your remarks. I think they are very timely. Has anyone else any-thing to say on this matter? Mr. Fowler: Mr. Chairman, I don't want to make this a duet between Louis and my-

to make this a duet between Louis and myself, but this question of power factor is a
very interesting and a serious one.

Taking the thought that Mr. Kalischer
presents, that penalties are sooner or later
bound to accrue against power consumers
on account of poor power factors in their
equipment—I don't believe the manufacturers are entirely to blame for that condition. Our Association itself has been delinquent in that respect, as have all other orquent in that respect, as have all other organizations, in desseminating information and carrying on an educational campaign among consulting engineers and contractors generally, on the vital importance of knowing just what power factor does mean in installations of this kind. You may care to say something further on that point, Mr. Chairman. CHAIRMAN SHORE: Do you want me to you something with reference to power

MR. FOWLER: Yes, if you think the point we have raised is important enough to war-

rant some remarks.

CHAIRMAN SHORE: The question of power factor is of much more interest to the central station than it is to the contractor, as I see it. Putting in motors that are of much oversize, or improper design, or motors that are run under load, suffer from the poor power factor, and the effect of that is a reaction on the central station transmission line—it causes a great deal more current to flow through the wires than would be absolutely necessary if the motor were operating under ninety to ninety five percent power factor. The result is that the central stations cannot use their transmission line to its full capacity; they can only use their lines to fifty percent capacity. Whereas if they put a penalty on poor power factor and required the customer to put in apparatus that would raise it to a hundred percent power factor, they will be able on those same transmission lines to carry twice the amount of power.

But the central stations have not as yet put into effect any penalty clause as far as power factors are concerned, except on cerspecify directly that they are to be synchronous motors so that unity power factor may be obtained. But for the average installation there is no such clause.

Mr. Fowler: The point that I was trying to get at was that public service commissions are beginning to recognize that feature, and they are permitting utility companies to make rates for power, based on the value of the power factor in the installation. If this is true, and it is growing, then our customers are going to feel the weight of that thing, and it would be wise for consulting engineers to become familiar with that factor, and conduct themselves accordingly.

CHAIRMAN SHORE: I misinterpreted what you said. What you mean is that the contractor interested in power work should become more familiar with the apparatus and the necessary material to be put into an installation to secure a higher power fortune. stallation to secure a higher power factor

in customer's work, and in that respect reduce his bills as much as possible. Is that correct?

Mr. FOWLER: Yes, and there should be more educational work done by manufacturers among consulting engineers looking toward that end.

Mr. Fishback, New York City: Mr. Chair-

Mr. Fishback, New York City: Mr. Chairman, I think that the Association should take up the question of electragists connecting equipment sold by other trades, such as ventilating apparatus and pumps, which are usually sold by plumbers. They are all motor driven, and I think we ought to carry out the idea that such equipment should be bought through electragists. And I might say that we could get around to that by not connecting equipment that is not bought through electragists, in the same way that steamfitters will not connect radiators bought through outside contractors. I think that is a very fit and proper subject to take up at this time.

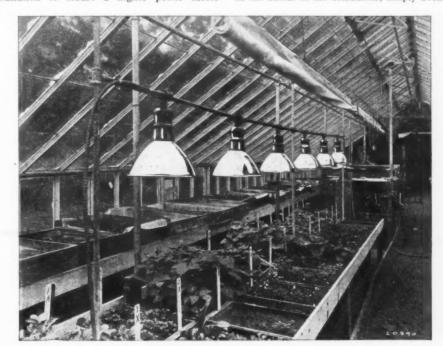
that is a very fit and proper subject to take up at this time.

CHAIRMAN SHORE: Is there anyone else who would like to say anything with reference to what Mr. Fishback has just spoken of? We have plenty of time for discussion. Is there anyone who agrees with Mr. Fishback on this matter? Is there anyone who disagrees with him?

Mr. Kalischer: It does seem apparent, Mr. Chairman, that this is purely a local question. For instance in the work that Mr. Fishback does, and you other gentlemen do, particularly in the New York district, where the installation of motor equipment, the transformer and high tension goar runs anywhere. former and high tension gear runs anywhere from fifteen thousand to fifty thousand dollars, the entire work is entrusted to the con-tractor, and he must, in the language of the street, beat his fool head off to get the job. street, beat his fool head off to get the job. Then they turn all the equipment over to him to check up, and let him throw the switch and let him start up the synchronous motor, knowing she will either start or blow. The contractor takes all the chances, and he knows full well that he is not going to make a collar button out of the job.

Now, Mr. Chairman, I submit that this is not a question for the International Association. It is purely a local proposition. They will entrust the entire starting of that plant in the hands of the contractor, simply because

in the hands of the contractor, simply because



Aren't There a Few Greenhouses in Your Territory? Here's a Chance to Make a Profitable Lighting Installation or Two. The Above View Taken in a Peter Henderson Greenhouse at Baldwin, Long Island, During a Test Conducted by the Westinghouse Lamp Company, Proved Conclusively that Electric Light Accelerates Plant Growth

he happens to have got the job because he was the low man. They say, "Well, he is the low bidder, and he has a license, and he did this job, or that job"—and he may have, with all due respect to our English friends, muddled through somehow, and they entrust that all in his hand.

I have in mind a case where due to mechanical conditions it was rather difficult to hook up transformers, and we changed the internal connections of the transformers so that mechanically outside it was a good job. The representative of the lighting company came in and inspected the job and said, "It is all wrong, and if you permit Kalischer to throw those switches you will burn out all

your transformers."

This man had spent something like two hundred thousand dollars on the plant, and he was naturally very much disturbed, and promptly blew up, and threatened to throw me over the smokestack. We told him the man was mistaken, that the transformers were not only hooked up right, but we had them running on the line. However, he was satisfied that we were going to burn him out, because the central station representative hadn't asked about, but merely went in and saw, the peculiar connection on the outside of the transformer leads, and promptly concluded that we didn't know how to hook them up

that we didn't know how to hook them up.

Now that same company, when they called on us to figure again on another ice plant, one of the biggest in the city of Brooklyn, we declined absolutely to have anything to do with it; we refused to figure on the job. The engineer said that this was impossible, that we would have to figure on it. I said, "With all due respect to you, we would like to figure, but we wouldn't take the job if we won it, and therefore what is the use of figuring it?" He said he would have the head of the company call me up and apologize, and I said, "That is impossible, because that man was about six feet four and weighed about three hundred and fifty pounds—just imagine him apologizing to me!" But he did call me up.

did call me up.

Now just imagine entrusting a job of that magnitude to our hands. It is unfair, it is inequitable, and if I had anything to do with it, if our local association was strong enough. I would bind in some way the International and the local together, to simply say, "No, we are not going to do it. You can't expect us to function for nothing." And if the big companies understand that, they will come through and come through and

through, and come through properly.

Mr. Fishback: Mr. Chairman, there are some points brought up by Mr. Kalischer that I wish to refer to. The matter of the big companies selling electrical equipment, such as motors, transformers, rotary converters, and so on, directly to the owner, I maintain is not a local proposition. It is a national or an international proposition. Any architect or engineer can buy any kind of equipment, motor generators, or transformers, at a better price than we can. That is not a local question. It is an international question, and that is the point that I meant for the Association to consider.

CHAIRMAN SHORE: Is there any further discussion? I would like to hear from some contractor who is from some other city besides New York, as to how he finds the conditions with reference to the sale of motors and power apparatus—whether it is necessary to give a discount, or whether he obtains list prices, or more than list prices.

MR. JACKSON, Terre Haute: Mr. Chairman, we have the same condition in our city that the gentleman from New York spoke of, that we don't get what we should out of this apparatus.

I have a case in mind where a customer of mine wanted a switch for a sign, and the

manufacturer sold that direct to my customer, after he had quoted me, knowing that I wanted it for this particular sign. That is what we are up against in our town.

Mr. Kalischer: Did you tell the customer about what he would have to do—that it was special, to the extent that the manufacturer knew that it could not be used for anything else?

MR. JACKSON: Yes. In the first place I asked for a quotation, telling them what I wanted it for, and then the manufacturer turned around and sold it to my customer direct and as you say. I am the goat.

direct, and as you say, I am the goat.

MR. J. WALTER COLLINS, Chicago: Mr.
Chairman, I could talk probably a couple of hours on this subject. In Chicago we have had experience among a hundred and thirty seven contractors in the matter of handling motors more or less—mostly less.

We haven't got the proper arrangement for the handling of motors. Our association in Chicago is interested in what we commonly call ourselves, contractor dealers. We cannot find any reason why the contractor-dealer proposition should extend only to the ability to sell a perfect lady a perfect type of percolator, or something of that sort. We feel that if we are going to be dealers, we want to sell everything that is electrical.

All through this contractor-dealer campaign I have never heard anyone go beyond a washing machine or percolator sale. Everyone has religiously stayed away from even mentioning anything about power apparatus. We have had one case in Chicago within the last month, in which one of our biggest

We have had one case in Chicago within the last month, in which one of our biggest contractors, a very capable man, specified exactly the kind of apparatus to be used in the place, and when he came to get his figures revised—which most of us do—he found that the entire apparatus had been taken out of the contractor's specifications. He had even gone so far in his specifications as to give the catalog numbers, but the manufacturer convinced the customer that No. 682 wouldn't work as well if it was in the contractor's specifications as No. 682 would work if it was put in the special specifications and given direct to the manufacturer.

What Mr. Kalischer says about the sale of apparatus and motors holds good in Chicago, just as well as in Brooklyn.

CHAIRMAN SHORE: Has anyone anything else to say? I would just like to say a few words in closing the discussion. This deals with merchandising. We have all been educated up to the point where we can sell a washing machine, or a vacuum cleaner, as Mr. Collins says, because it has a motor on it. As far as that is concerned, we might as well sell any amount of different things that have motors on them.

To sell motors direct in my opinion is strictly within our province as contractors. There is no reason why a contractor should not sell a motor driven compressor, or machine tools. Of course he has been educated up to selling small drills, but there is no reason why he shouldn't sell a machine tool that is equipped with a motor just as he sells a washing machine. In fact it is much easier to sell such a machine tool than it is to sell a washing machine, according to my expe-

With the help of some of the fan companies the contractor can obtain a little information on ventilation, and purchase his fan equipment, and the sheet metal man can do his metal work and equip the entire blower outfit. That is a matter in which he can handle the whole thing

handle the whole thing.

I think there is a great opportunity offered for us to become merchandisers, but we don't have to deal in household merchandising exclusively. We can deal in manufacturing

plant merchandise, in which we can not only get more money, but we can get our money easier.

MR. FOWLER: I think it would be a mistake, Mr. Chairman, if some discussion is not had here on motor repair work. I am not interested in it at all, but from an Association standpoint I think that is quite an important subject.

MR. GEORGE T. BARROWS, Pittsburgh: Mr. Chairman, I don't sell power equipment—I am just a house wirer and washing machine man. But in this discussion you find two features that you can't get away from. In the first place the manufacturer is better equipped to get the inquiries and sell the apparatus than we are.

Now we have got to work some kind of a deal to get the manufacturer to turn those inquiries over to us, or arrange matters so that we can work with him and get something out of it.

My experience in central station work since I have been a sort of contractor has shown me that I haven't the organization or force to go out and sell this equipment as complete as you fellows talk about. Of course you have bigger forces than I have. But you have got to take those things into consideration. The manufacturer has either got to sell this apparatus himself or help us to sell it. But we can install it, and we have got to make some sort of a joint combination to bring about a cooperative scheme, if it is possible to do it. I don't know just how it can be done.

it can be done.

And another thing: You talk about all the rules and regulations that we are up against. And it is true, because when this fellow over here accepts the lowest bid, he says, "This fellow has got to install this apparatus according to the rules of the Underwriters," and he thinks that we are tied up in such a way that we have got to find out how to put this apparatus in so that it will oversite property.

operate properly.

The two big things that we want to look after is a little more cooperation with the manufacturers, and a better understanding of national rules of installation. If we get the cart before the horse we can't get very far in doing anything on this problem.

MR. ROGERS, Washington: Mr. Chairman,

MR. Rocers, washington: Mr. Chairman, the plumbers have such a condition as we are talking about. You cannot buy a plumber's fixture from a manufacturer. It has to be billed through the plumber who is handling the operation, and the manufacturer takes care of him with from five to ten percent right straight through. I don't see why there should be any reason why we should not have the same sort of an arrangement with the manufacturers of electrical appliances, other than those connected with air compressors and so on, which I think would be hard things to handle, due to the fact that they are generally connected up to the ventilating system, and the ventilating man would have to estimate that himself, unless the engineer would undertake the responsibility, which in many cases he doesn't care to do.

If the manufacturers of electrical ap-

If the manufacturers of electrical apparatus would sell no goods except through the order of the contractor on the operation, the same as the plumbing fixture manufacturers are doing, this whole situation could be easily overcome. There is no reason why an owner should go out and buy stuff and hand it to us, to wire property that is worth anywhere from fifteen hundred to two hundred thousand dollars, where our own part of the work amounts to probably two hundred dollars.

I hope that every man who helps to write specifications will see to it that the fixtures are given over to the contractor who wires the building and does all the work. There is no reason why we should have to go back and repair the work after the fixture man, where he has made mistakes. The plumber handles the plumbing fixtures, and if he doesn't get to handle the plumbing fixtures he doesn't do the job, and you can't bring another plumber in on the job in his place. The plumber who is on the job has to do all the work in that building, and until he has finished and left the building no work can be installed by other plumbers. We surely have got as much sense as plumbers—God knows we have. But we don't go at it the way they do. They have tied up everything. Nobody here tried to break a license issued to the plumbers. The plumbers have no right to have a license here that cannot be broken. It can be broken, but nobody has tried to It can be broken, but nobody has tried to

break it.

I think this matter can be easily handled. There are really only a few big manufacturers, and if the big ones lead out it is a cinch that the rest of them will follow. Mr. Chairman, don't you think that could be handled?

CHAIRMAN SHORE: I agree with you in everything you say, except one little point.

You say that the matter can be easily handled.

I don't quite agree with you on that.

Mr. Rocers: I think it can be easily handled. What do the big companies care about what becomes of the five percent? That about what becomes of the nive percent? That is the story in a nutshell. It isn't any skin off of them. There isn't a penny of it comes out of their pocket. If their selling price was a hundred dollars and they had to give up five dollars of it, then they would sell it to the owner for a hundred and five dollars, and thet five dollars, would have to be tacked on that five dollars would have to be tacked on every man's cost.

Now, there are men in this organization big enough to handle that matter. Such a man as Mr. Strong could go and talk to them, perhaps during a luncheon with them, and find out what could be done. You know you never get anything unless you ask.

You never get anything unless you ask.

A Member: Mr. Rogers says he thinks we have got as much sense as the plumbers. I don't think so, because they have the chance to take care of themselves in these matters.

Mr. Benjamin Goldberg, New York City: Mr. Chairman, I wonder if all this trouble isn't the fault of the electragists? In all

my experience I have never had the Westinghouse or General Electric people sell apparatus to any of my customers, because I have had my customers trained differently.

MR. FISHBACK: Mr. Chairman, I happen to know about the business in which Mr. Goldberg is engaged, and I will say that he doesn't sell equipment that runs into fifteen to fifty thousand dollars. It is perfectly natural for a customer to buy a motor that costs two or three or five hundred dollars, from the contractor, but when the equipment runs into fifteen or twenty thousand dollars the owner will buy direct from the manufacturer and the only way we can overcome that turer and the only way we can overcome that situation is to refuse to connect any equip-ment that is not bought from the manufac-

turers through the electrical contractor.
CHAIRMAN SHORE: Gentlemen, I am sorry CHAIRMAN SHORE: Gentlemen, I am sorry that we didn't get into this end of the discussion earlier, because there is a great deal to be said on it. I feel that we have got to the point where the large manufacturers are not keen about selling a hundred dollar, or even up to a five hundred dollar equipment, direct to the owners.

The New House Wiring Manual

A Valuable Survey Completed by the A. E. I. Covering Knob and Tube Wiring in Residences

The Association of Electragists has just released to its members a House Wiring Manual prepared by the Cost Data Committee of the Association, of which Arthur L. Abbott, of St. Louis, is chairman, giving very valuable data on knob and tube wiring in residences. Perhaps no single contribution of the Association to its members will have a wider practical use to more members than this manual for estimating house wiring in that highly competitive field.

The common practice of estimating house wiring on a flat price basis for all outlets has been more responsible for destructive competition, inadequate wiring and the high mortality among house wiring contractors from failures than any other cause. Even the "flat price" is usually established by the competition of inexperienced wiremen without any knowledge of their costs and that competition develops into a price cutting race to see which wireman can induce the customer to leave out the most outlets. Since all "outlets" under that system bear the same price they leave no impression in the mind of the customer as to the installation value of the various units or varying quantities and qualities of materials and methods of installation. Outlets are simply something stuck into the walls, ceiling and floor, to be bought as cheaply as possible and as sparingly as possible, the "flat price" competition leads him to believe.

The new House Wiring Manual divides the wiring into its component parts of type of service and type of outlet, and from data collected on many jobs through the country it gives the



Arthur L. Abbott

quantity of each item of materials and amount of labor in hours for each type.

It covers both new and old houses and is printed in a practical form providing spaces for the individual contractor to set down his local prices for materials and labor opposite the quantities of each item, giving him accurate knowledge of his individual costs.

With this House Wiring Manual the electrical contractor has the means of selling his customer on his house wiring job. It visualizes for the customer for the first time what he is getting when he buys an "outlet," what are the materials that enter into that installation, and the opportunity for substitution of inferior materials by irresponsible wire

And for the first time it gives the electrical contractor a sound way of selling additional outlets after he is on the job, knowing that each outlet stands on its own merits in price.

Estimating the cost of wiring a residence is a problem that is not easily solved. Many methods are employed, but a method to receive popular attention must be simple and practical, as well as accurate.

The method which is based on the number of outlets regardless of kind, is simple enough it is true, but very little can be said for its accuracy. For knob and tube wiring it seems best to consider a separate cost for the service and a different cost for each type of outlet. Such a method is convenient and as applied to a number of jobs appears quite accurate.

Local ordinances are so different that it is impossible to specify exactly the material required, and constantly changing and widely different prevailing prices make it impractical to place opposite each item the cost in dollars and

a mission is am not ociation portant : Mr. ment-

No. 4

ot only

money

nachine nd two In the uipped paratus id of a 1 those ters so nething

k since shown force s com-Course ut you sideragot to to sell ive got if it is

st how

out all are up en this oid, he Under-ied up nd out o look th the ling of

get the ery far irman, we are mber's to be indling takes t right should ve the manu

and so ngs to e geng sys-ave to ich in l ap-arough ration,

nufaccould n why hunpart hunwrite

xtures wires There

TABLE NO. 22-Summary of Knob and Tube Costs

	1			1
V-			0	
	9	1		•

Arthur P. Peterson

cents. The average quantity of each item is given, however, and the estimator should insert the proper figures and

	TABLE	New	House	OLD]	House		
OUTLET	No.	Cost	Charge	Cost	Charge		
Ceiling Light	10		******				
Ceiling (see Note under Table 11)	11				******		
Bracket Light	12						
Single Pole Switch	13				******		
Three Way Switch	14			******	******		
Four Way Switch	15		*******		******		
Convenience—Single	16	******		******	******		
Convenience—Duplex	16A	******	******		******		
Floor Box Receptacle	17		******		******		
Heater Outlet	18				******		
**************	******	******		******	******		
	*******		******	******			
		******	******	******	******		
************		******		******	******		
Bell and Push Button	19	******		******	******		
Additional Bell and Push Button	20			******	******		

make such changes as are necessary from time to time. Spaces are also included for any additional items which may be required in certain cities.

The average cost per man hour should be determined at the prevailing wage scale. Once these figures have been entered only the total cost price of service or outlets is used. Tables

21 and 22, shown in this article, give a summary of such total costs and will be found very convenient.

All figures on quantities of materials and labor shown in the tables of the Manual are averages computed from the experience of many jobs under various conditions. Decreases or increases in quantities may be necessary for known conditions of specific jobs. For example, an outlet at a remote point may require more materials or labor, or two outlets close together may allow the estimator to plan a saving in

In using this Manual, the estimator needs only to have a complete schedule of outlets, kind and length of service, floor construction in the case of an old house, and whether it is a frame or brick dwelling. With this information at hand, it is but the work of a few minutes to determine the total cost of the job.

To arrive at the selling or contract price, reference is made to table 23, printed herewith, from which the percentage to be added to the prime cost is obtained. This percentage covers overhead and profits.

In preparing his preface to this Manual, Chairman Abbott writes as follows:

"This, the first issue of Section 2 of the Manual of Estimating, dealing with residence wiring, should be regarded as the preliminary step toward the compilation of a complete house wiring manual by the Cost Data Committee of the A. E. I. However, it is believed that this new manual will prove a valuable guide to the estimator of house wiring.

"Additional data is needed and members of the Association are urged to keep records on a few of their house wiring jobs on the forms provided for

TABLE NO. 12-Bracket Light Outlet

		New House	E	OLD HOUSE											
ITEM	Quantity	Each	Cost	Quantity	Each	Cost									
No. 14 S. B. R. C. Wire.	30 ft.			40 ft.											
¼" Loom NoKnobs	3 ft 7			15 ft.											
៊ីថ" x 3" Tubes Outlet Box	8	*******	******	4		******									
*Screws, Clamps, etc	*******	*******	*******		*******										
†Labor		********	*******	1½ Hr.		*******									
Total Cost				********											

*An allowance of about 10 per cent of total cost of material should be added for this item.

† Allowance is made for lost time and traveling time in the labor item throughout the manual.

Sample Table from House Wiring Manual

TABLE NO. 21—Summary of Service Costs

	TOWN .	TABLE	NEW	House	OLD 1	House
	ITEM	No.	Cost	Charge	Cost	Charge
Non	-Conduit Service		***			
	Two Wire-One Circuit	1				
	Two Wire-Two Circuits	2				
	Three Wire—Three Circuits	3				
	Three Wire-Four Circuits	4				
Con	duit Service					
1	Two Wire-One Circuit (10 ft.)	5				
	Two Wire-One Circuit (15 ft.)	5-5B				
	Two Wire-Two Circuits (10 ft.)	6				
9	Two Wire—Two Circuits (15 ft.)	6-6B				
Frame	Three Wire—Three Circuits (10 ft.)	7				
E	Three Wire—Three Circuits (15 ft.)	7-7B				
	Three Wire-Four Circuits (10 ft.)	8				
1	Three Wire-Four Circuits (15 ft.)	8-8B				
1	Two Wire-One Circuit (10 ft.)	5A				
	Two Wire-One Circuit (15 ft.)	5A-5B				
1	Two Wire-Two Circuits (10 ft.)	6A				
-34	Two Wire-Two Circuits (15 ft.)	6A-6B				
Brick	Three Wire—Three Circuits (10 ft.)	7A				
B	Three Wire—Three Circuits (15 ft.)	7A-7B				
	Three Wire-Four Circuits (10 ft.)	8A				
	Three Wire-Four Circuits (15 ft.)	8A-8B				
Gre	ound Wire	9				

USE

harge

.

.....

give

will

rials

f the

from

r va-

in-

sary

jobs.

mote

s or

may

g in

ator

dule

vice.

old

or

tion

few

t of

ract

23,

per-

cost

vers

this

as

of

vith

ded

om-

ing

of

ved

ılu-

use

em-

to

use

for

TABLE NO. 23-Table of Percentages to be Added to Costs to Find Selling Prices

		Over	head Pe	rcenta		st of Gross S		g Busin	ess divid	ed by
		15%	171/2%	20%	221/2%	25%	271/2%	30%	321/2%	35%
	21/2%	21	25	29	33	38	43	48	54	60
	5 %	25	29	33	38	43	48	54	60	67
	7 1/2 %	29	33	38	43	48	54	60	67	74
Percentage	10 %	33	38	43	48	54	60	67	74	82
of Net	121/2%	38	43	48	54	60	67	74	82	90
Profit	15 %	43	48	54	60	67	74	82	90	100
Desired	17 1/2 %	48	54	60	67	74	82	90	100	
	20 %	54	60	67	74	82	90	100		

NOTE:—In the above table the percentages shown are the nearest whole num bers, omitting fractions.

that purpose by the Association. As this material is received and analyzed refinements of the present Manual will be made if necessary and it will be enlarged to include all other classes of residence wiring work.

"The cooperation of individual members and local associations which has made this report possible is appreciated by those responsible for the present work.

Constructive criticism and suggestions will be welcomed by the Cost Data Committee of the Association of Electragists."

Especial credit should be given to Arthur P. Peterson, field representative of the A. E. I., for his work in collecting and analyzing much of the data used in preparing this new House Wiring Manual, under Mr. Abbott's direction.

Developments in Merchandising

By J. SWAN

Given by Appliance Manager Winnipeg Hydro System at Meeting in That City

Greater developments have taken place in the retail selling of electrical household appliances during the last few years than there has been in any other domestic household line. A comparatively short time ago the demand for rapid changes of style and fashion were lacking, the prevailing characteristic of retail selling was its monotony.

The majority of lines consisted of staples that were largely in demand year after year. The conditions were not those which nerve ambition and promote efficiency. The prevailing opinion at that time was that anybody could keep a store. The proprietor of a store and his assistants knew what the various articles cost and they got as much for them as they could, within reason, while the customer paid as little as possible. Bargaining was the rule.

Retail competition was based largely on price. They aimed, as many do now, at big profits on each article and outwitted their customers as often as they could. The dealers who were apparently the least successful in maintaining prices were often the most successful.

I do not want anyone to misunderstand me and think that I am advocating the theory that the dealer should sell on too close a margin or sacrifice profit for turnover, but I do say that a turnover plays a larger part in the success of a well conducted business than does long profits on a small turnover.

The retailer plays a most important part in the commercial world, he is the great middleman, greater than all other middlemen combined. He creates time and place utilities. He makes it easy for the manufacturer to manufacture his goods, and easy for the consumer to get them. He is the main building of the clearing house between demand and supply.

I do not think that the electrical merchandiser today is receiving the encouragement nor getting the reward that is truly his due, in return for the very high service he is giving the public. It costs money to give this service. It costs the electrical dealer more in time and money to give real service to the public than the merchant in almost any other capacity.

The public appears to be obsessed with the belief that the electrical dealers are parasites. Perhaps we ourselves are to blame for this. It may be that we talk too much about the small gross profits that we have from the sale of our appliances. Instead of our talking of gross profits, we should only talk of margin. Literally there is no such thing as gross profit. The only profit possible is net profit, and if there is no net profit then there must be a loss. If there is a loss, then our overhead is either too high or the margin is too close, or perhaps both. A manufacturer never talks of gross profit in his business.

Let us take stock of ourselves and see just where we are heading. An analysis made some months ago of reports from 6,000 dealers in all lines of business showed that only 10 percent

What they had in stock.
What their real profits were.
What their expenses were.
What their unprofitable lines were.

It is only by records of past performances that plans for the future can be made with any degree of certainty.

There are many things that might be touched on that would be helpful to us all-advertising, location, window trim, display, service. Advertising is as necessary to sales as is rain to crops; it is just as broadcast in its effect and just as important in its value. However, the socalled advertising does not always bring results. For example the dealer who takes a page in some club or society program, or buys six tickets for some charity concert, is not buying advertising. He is giving to charity, and these donations should be taken from his charity box and not charged up as advertising. No sane man ever expects to get any profits into his business from these soft hearted stunts. Give all you can for good charitable purposes, but don't charge it up to advertising and then say that advertising is a failure and don't pay.

A dealer with a good show window ought to make his window pay rent. In the first place it should be kept clean. There is nothing more repulsive to the eye than a dirty window littered with appliances of all kinds that look as if they had been thrown in by an earthquake. There is no dealer in any line can make a window look more attractive than can the electrical dealer. The nickle plated and highly finished appliances lend themselves admirably for this purpose. Shall we not all get busy and help along with the great task of keeping electrical merchandising up to a high standard in every respect?

Don't Wait For Perfection in Radio

A great many sales of radio equipment are lost because the prospective customer is skeptical. He hears of great new things being done, and he concludes that he will sit tight. When they get everything worked out to perfection—then, and not before, will he buy.

Radio will never be perfected. No matter how perfect it may be now, or ten years from now, men are going to keep on experimenting and inventing—changes are going to keep on. So the wise man who waits for radio to be perfected, if he keeps his word, will never own a radio set.

The first automobile was made about 1893. The early vehicles make us laugh when we see pictures of them. In 1910 we thought the automobile was about as perfect a piece of machinery as it was possible to design and build. But the 1924 automobile is miles ahead of it. It is ahead of the 1923 models, and the 1925 models will be ahead of this year's cars.

The first telephone was a queer looking object. But people started to use them and improvements are going on all the time. By the time they finish installing all the new automatic dialing apparatus, something else will come along. But we do not go without telephone service to wait till the telephone is perfected.

Columbus crossed the ocean in three tiny ships which would not be big enough to form any appreciable part of the famous "Rum Row" fleet. He did not wait for the steam turbine to be invented, nor did he wait for all the great improvements that make ocean travel safe, fast and convenient. If he had, the chances are that the Indians would still be building camp fires in

the vicinity of Times Square and Michigan Boulevard.

People make the best possible use of things as they become available. In King Arthur's day, they used rush lights at night. Later came the whale oil lamp; then, centuries later, came the discovery of oil and the use of the kerosene lamp. Following this, gas became practical. And almost before gas got the chance to become the universal light, Thomas A. Edison came along with his incandescent light which revolutionized home, office and store lighting.

But even the development of this light was gradual. The first carbon lamps gave a sort of sickly yellow light and used much current. Then came the first tungsten lamps which had to be handled with kid gloves to keep the filament from breaking; then came developments in filament manufacturing that made it possible to use the lamps under extreme conditions of vibration. Finally came the gas filled bulb-and the end is not yet. We all took these many forms of illumination as they came along. We did not wait for the gas filled incandescent bulb when we had only the kerosene lamp. If we had, we would be using kerosene lamps still.

Progress is seen in every article that enters into our daily life. To get the greatest use, the greatest enjoyment and the greatest benefit from things, we must buy the best there is, then when better things are invented, we adopt them. But the older things are still usable. The radio set of today will be workable ten years from now. Maybe not so good, maybe not so much distance, maybe not such a fine tone, but usable nevertheless.

Radio Progress in 1923-A Review

By John Liston

These Developments of the General Electric Company Typify Signal Advancement of the Science Since a Year Ago

Important improvements in vacuum tubes for radio purposes marked developments in 1923. These were mostly in the direction of increased efficiency of operation and a general betterment of electrical characteristics.

It is also interesting to note that during the year there was started in regular production a new tube of the highest power so far standardized, and also the smallest tube requiring the least power expenditure in the filament that has so far been made available to the public for radio receiving sets.

The smallest standard receiving tube operates with an expenditure of only .18 watts for the filament which is of a new type and insures high electron emission, silent operation and long life.

The development of the new filament made possible the remodeling of the Radiotron UV-201, the previous standard receiving tube, so that it only required one quarter the former amount of filament power. At the same time the characteristics of the tube were changed so that it became a better detector and amplifier.

A new highly efficient 50 watt transmitting tube, UV-203-A, was developed and put into production. This tube also incorporated the new filament which enabled the filament energy required to be cut to one half its former value for this size of tube and at the same time the characteristics were greatly improved. The operating life was also increased several fold by the change to the new filament.

A new tube of 250 watts, UV-204-A, output also employed the new filament which decreased the power consumption to about one quarter of its former value and also improved the life.

Many Important Improvements

A transmitting tube of 20 kw. output operates from a direct current source of 12,000 to 15,000 volts. In this tube, UV-207, the anode is also the container and the tube is designed to operate with the anode container immersed in running water so as to dissipate the heat developed in the interior of the tube. Several of these equipments were placed in service and more than a dozen other sets are being installed or were under construction.

Many important improvements were

made in the design and production of the radio apparatus, the advances being especially notable in broadcast receivers. The public's interest in broadcasting continued unabated and the demand for apparatus was so insistent that a considerable number of new styles were standardized.

The sectional units which were formerly standardized were combined in various groups so as to meet different requirements. One of these units, a detector amplifier, was used in conjunction with the tuning unit, and suitable means were devised for combining the two to form a receiver set suitable for use with outside antenna. The set is very simple in operation, having a single tuned circuit and is provided with regeneration when operated with a tube detector. A crystal detector is a part of the receiver for giving head telephone reception on nearby broadcasting stations when desired. These sets were adapted for the dry battery radiotrons, thereby entirely eliminating the necessity of storage batteries.

Another set was made by combining the same detector amplifier unit with a three stage radio frequency amplifier unit to make a set suitable for use with loop aerial. This set is very simple in operation, there being but one tuning control, the variable condenser in parallel with the tuning loop.

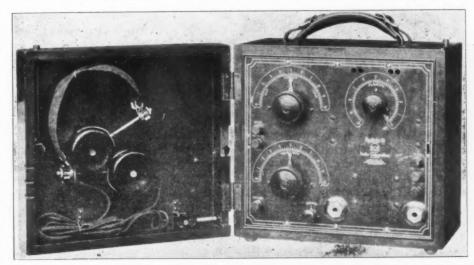
New component parts were added to the line of standarized parts already available for use by amateurs and those desirous of constructing their own sets. The principal additions included socket and rheostats for the new low filament current radiotrons as well as adapters for using these tubes in the sockets originally supplied in many sets.

A loud speaker was developed for use as an addition to sets not already equipped with one. It is very sensitive and reproduces signals with clear equality and a single adjustment is provided for the diaphragm, which gives good operating efficiency over a considerable range of signal intensities.

New Receiver Requirements

Early in the year the requirements for receivers took on a new aspect. Portable and self contained receivers had become possible due to the new tube developments, and these suddenly were widely demanded. The receiver designed to meet this need, utilizes a single circuit regenerative system with a detector and an audio amplifier tube, functioning well over the broadcast range. The method of control is exceptionally simple. The telephones and plug are carried in the front cover, while the batteries are in the rear. Having a complete weight of but 18 pounds, the set is made easily portable by the addition of a leather carrying

The small crystal receiver previously standardized was also adapted to meet the changing demand. It is now housed in a wood case, and is fitted with a car-



An Example of the Result of Manufacturers' Efforts to Make Radio More Understandable by the Customer. Instead of Labeling on Panels the Technical Names of Devices, Such Terms as Intensity, Wavelength, Ground, Etc., Are Used as Here Shown

rying handle for portability; the telephones being carried in a compartment in the rear cover.

Perhaps the best example of adaptation of the new radiotrons to a complete receiver is to be found in the self contained cabinet receiver which utilizes a single circuit tuning system with regeneration and has a detector and two audio frequency stages. The batteries are supported inside the cabinet and the loud speaker is built into it. The tuning controls, two in number, are easily accessible.

Developments in the line of commercial receivers included the standardization of those used in the trans Atlantic and trans Pacific stations of the Radio Comporation of America. The layout of these communication channels consists of three separate divisions; first the transmitting stations usually located at some advantageous position near the coast for sending the communications across the sea; second, a receiving station, also advantageously located for reception from across the sea, but usually removed from the transmitter; and third, the operating division, usually located in the heart of the business or financial center to which the communication service is to be rendered. The operating division may frequently be separated by 100 to 200 miles from either of the two other divisions but it directly controls through suitable remote control relays the operation of these two divisions. Thus, communication is directly carried on from the desired point, without transcription by the other divisions.

The equipment in the receiving stations consists of eight separate large units, not including the relays necessary for transposing the signals on the land wires.

Use of Radio in Japanese Crisis

It is interesting to note that both the stations which took part in bringing the news of the Japanese disaster in September, 1923, to the world, were equipped with the above standard receiving equipment. On the Japanese side the operating division of station JAA was located in Tokyo, while the transmitting division was in Haranomachi some 155 miles away, and the receiving division 187 miles away at Tomicka. On the American side a similar situation existed. Station KET has its operating division in San Francisco, its transmitting station at Bolines, about 50 miles away, its receiving station at Marshall, 44 miles away.

Station JAA usually works through the Radio Corporation station at Koko Head, Honolulu, but in this emergency communication was carried on directly across the water. The personnel of both stations worked incessantly at fever heat, while Japan told of her terrible calamity and needs. With all other communication systems out of orred radio stood as the only means by which the call for assistance could be brought to mankind.

For the purpose of securing a high voltage direct current supply for the operation of radio vacuum tube transmitters, and for experimental work there was developed and built for the United States Navy Department a kenetron rectifier, rated at 30 kw. at 15,000 volts direct current. It contains twelve Model UV-219 kenotrons, so connected that so called three phase full wave rectification is obtained.

The rectifier has associated with it the necessary controls whereby the output can be adjusted from full output to a small fraction thereof. The filter system is associated with the rectifier which smooths out the remaining ripple in the rectified alternating current to less than one-tenth of one percent. This rectifier is now installed on the Navy Department Laboratories at Bellevue near Washington, D. C.

Linking Communication Systems

As a link in the communication system of the United States Signal Corps there was built for installation at Fort Douglas, Utah, a 10 kilowatt vacuum tube telegraph transmitter. Many novel features of construction were included due to the wide band of wave lengths which it covers, and to the necessity for including switching mechanism whereby wave length (frequency) could be readily changed to any one of five predetermined values. Air condensers of a new design were utilized. A number of vacuum tube telegraph transmitters were built for the communication system of the United Fruit Company. These transmitters are mostly installed in Central and South America, and will when in service form what will probably be one of the most modern commercial radio communication systems in existence. They have an output of 20 kilowatts at any wave length between 2,500 and 4,500 meters and include switching mechanism, so that any one of two predetermined wave lengths can be readily obtained.

The sets include recently developed circuits which insure constant frequen-

cy of the output, and the practical elimination of harmonics. The transmitters consist primarily of a socalled master oscillator, the output of which is amplified by means of a water cooled philotron, which delivers its output to a tank cricuit, which is coupled to the antenna. They are designed to operate on antennas of the multiple tuned type, having two tuning points.

In connection with the air mail service of the United States Postoffice Department, there was designed an air craft transmitter and receiver for use

on the air planes. The transmitter of this equipment puts approximately 200 watts into a trailing wire antenna. The power for the operation of the set is obtained from storage batteries which are kept charged by the engineer of the plane and these batteries operate a high voltage dynamotor, which supplies high voltage direct current power for the op-

eration of the transmitter.

The set consists of three major units—the transmitter, receiver and control box, together with a number of auxiliaries. The equipment was designed so that it can be advantageously installed in the fusilage of the plane, and so that maximum accessibility is given to the operator. The planes which will utilize the sets are built to carry the pilot only, and it was necessary to develop and design this equipment so that it can be readily operated by the pilot without interfering with the navigation of the plane.

General Squier Retired

Major General George O. Squier, chief signal officer of the Army, and one of the foremost scientists in the field of radio, was retired from active service late in December at his own request after a distinguished military career of almost forty years. He was appointed head of the Signal Corps on February 14, 1917.

General Squier, whose address at the last annual convention of the Association of Electragists in Washington—printed in the December number—was enthusiastically received, has been active in radio development and is most widely known for his invention of "wired wireless," which made multiplex telephony possible.

His many other contributions to science have won recognition in this country and in Europe. In 1910 he took out a patent for his multiplex telegraphy system in the name of the peo-

No. 4

elim.

nitters

master

is am-

d phi-

to a

he an-

perate

type,

il ser-

ce De-

ın air

or use

ter of

ly 200

a. The

set is

which

of the

a high

s high

he op-

units

ontrol

auxil-

ned so

stalled

o that

to the

l util-

e pilot

evelop

that it

pilot

gation

ed

Squier.

y. and

in the

active

s own

ilitary

le was

rps on

at the

ssocia-

gton-

-was

been

s most

on of

multi-

ns . 10

in this

910 he

lex tel-

ie peo-

ple, waiving the opportunity to reap large financial returns.

Radio Legislation

There will be no general radio conference in Washington in the near future, Secretary Hoover has announced. The Commerce Department is rapidly completing the details of a tentative regulatory radio bill, based on the old White bill, he explained. He believes that this can best be done by government officials without further conference.

Practically all the suggestions offered by representatives in the several lines of radio work presented at last year's conference will be incorporated, the Secretary indicated, pointing out that conditions have not changed materially since last year, except that the number of transmitting stations has increased.

Radio the Great Invention Some Things Which Make You Glad You Are in the Business

The Chicago Evening Post has for a long time gone in very strong for radio. It publishes daily programs, and like a number of other metropolitan dailies, issues a weekly magazine section devoted entirely to radio. In a recent editorial, radio was praised very highly. The editorial contains so much that is of interest to the electragist who is handling radio, that we reproduce it in full:

The extraordinary response which a discerning public has made to The Post's Radio Magazine is not only a gratifying evidence of appreciation for newspaper enterprise, it is a remarkable demonstration of the grip which aerial communication has taken upon the popular interest.

No invention of modern times has brought to the great mass of the people the many sided opportunities presented by radio. It is a unique development destined to contribute vastly more to the thought and progress of our age than is superficially obvious.

The delights of listening in would be alone sufficient to justify it as a diversion. It would be a hopelessly dull imagination which could not find thrill in the possibility of establishing within the seclusion of a home an instrument, occupying less room than a sewing machine, which literally brings the world about one's ears.

The man with books upon his shelves

keeps in touch with the living past; the man with a radio receiving set is in touch with the throbbing present. For him there is no distance. New York is as near as the loop; San Francisco as close as Edgewater Beach. He can hear the calls of ships all the way from the Mediterranean to the Caribbean. The lecture in Boston, the concert in Atlanta, the recital in Los Angeles are within his audience for the mere turning of a milled head on a dial.

If business rather than entertainment or instruction be his monetary interest, the trade of all the great marts can be brought within his hearing as readily. The pulse of the fleeting hour, whether it beats to the clamor of the traffickers on the floor of the exchange, or to the tempo of the conductor's baton in symphony and opera, can be felt by the man who sits in the stillness of his room, be it on the Lake Shore drive, on South Halstead street or in Ten Sleep, Wyoming. Radio has put an end to isolation.

Telegraph, telephone, phonograph, automobile and aeroplane—all these marvelously extended human possibilities; but what barriers still remained radio has broken down. Nothing has brought within the reach of so many so varied and far sweeping a realm for adventure as opens to the magic of wireless.

Radio is thoroughly democratic. It has joys for mass and class, for the youngster and the oldster, for the serious mind and the lover of frivolity. The ether is neither critical nor selective. It will carry jazz as readily as Brahms, or the open and close quotations as tolerantly as a lecture on art. You can go to the opera or to church; you can listen to Dr. Shannon or Voliva.

But a unique wonder of radio, as we see it, lies in the fact that the public has been in on its development as on the development of no other great invention. What discovery of the past has invited so curious and experimental an interest on the part of the multitude? The telegraph has remained in the hands of specialists; the telephone belongs to the public utility; the phonograph is sold to us ready built in its mahogany cabinet; the automobile and aeroplane are the products of great factories, but every man can be his own discoverer, inventor, artificer in radio.

There is no end to the possible hookups, to the combination of condensers, fixed and variable, variometers, variocouplers, crystals, tubes and all the rest of the marvels which make a radio shop window the most fascinating display in the world. Here is the real fun and one of the great values of radio. Who can say what may be the impetus forward which will come from countless thousands of boys throughout America who are studying the theory of etheric communication and working it out, by trial and error, on their reception sets? They may add no new thing to radio, but they will add much to their own capacity for constructive thought-for thought in the terms and in the sphere of that new world which science is unfolding to our amazed understanding.

Crosley Plant Expands

In order to bring production up to 5,000 sets daily, the plant of the Crosley Manufacturing Company will be moved to the factory formerly occupied by the Thomas J. Corcoran Lamp Company at Colerain Avenue and Sassafras Street, Cincinnati.

This new plant has floor space totaling 100,000 square feet as compared to 30,000 square feet in the present building, where the capacity is only 1,000 sets per day. The broadcasting station WLW maintained by the company will also be moved to the new building.

Re-Broadcasting at WGY Portable Transmitter Used to Relay Local Events to Major Station

A short wave radio transmitting set which may be transported to the scene of church services, concerts, dramatic performances or lectures, as easily as a motion picture cameraman is sent on news weekly assignments, has been introduced as part of the broadcasting equipment of WGY, the Schenectady station of the General Electric Company.

This set is not used to broadcast directly to the listener, but is a radio relay which conveys the program to the broadcasting station. This first radio transmission can not be tuned in on the average radio receiving set.

The portable transmitting set is conveyed to the hall or church from which it is desired to broadcast an entertainment or sermon. Wire connection is established between microphone or pickup within the hall or church and the transmitter of the porotable set outside. The wave length is too low to

interfere with the usual receiving sets or broadcasting stations and it is also so low that there can be no interruption from spark transmitters by armatures.

By means of a sensitive receiving set located near WGY, the electrical vibrations into which speech or music has been converted are picked up, amplified and then conveyed to the main transmitting equipment for WGY, from which the program is put on the air on the licensed wavelength of the station. 380 meters.

Prior to the introduction of the radio relay it was customary for WGY to connect church and radio station by wires. Wire installations required considerable preparatory work and because of the time involved in making the necessary installations some programs that might have proved instructive and enjoyable had to be omitted. The small transmitting set is mounted in a covered truck and may be taken to hall, theater or church, where in a short time the installation will be complete and ready for service.

Rebroadcasting does not affect the quality of music or speech. WGY has made frequent use of the radio relay method and the listeners were at no time aware that a radio transmitting set working on a low wave length had supplanted the wire link in the system.

There is another and even more important use for the small transmitting set in radio relay and this use suggests a particularly interesting development for radio in the future.

In the relay now in common use at WGY, the small station is used to feed into the larger transmitting set through the introduction of a receiving set between the radio links. It is possible that the future will see many of these small transmitting sets scattered about the country and used to reradiate on lower wavelengths, concerts received on a sensitive receiver from any one of a half dozen main stations, for the benefit of listeners with crystal sets or short distance receivers.

For example such a receiving set might pick up the best of the WGY program from Schenectady and then a special feature from WJZ or other station and by the use of the transmitter reradiate to the country side within a limited distance of the station.

This would give the man with the small receiving set the advantage of listening to a selected program, the best of the main stations. In this manner he would be able to get programs and to get music that would not otherwise be available to him on his set. Many of the distant stations can be tuned in at will when atmospheric conditions are right but there are nights and days when the average set has difficulty in getting distance. The small reradiating or relay station practically assures success to all the fans within a hundred miles at least.

Radio in England Improved

The new studio for the London Broadcasting Station, which was recently opened, is situated on the top floor of the British Broadcasting Company's offices at Savoy Hill. It is built on an entirely novel principle, the invention of Captain Eckersley, the chief engineer of the B. B. C.

The studio is a room within a room, thus affording complete sound isolation. Instead of the usual curtains to prevent reverberation, the walls and ceiling are covered with five thicknesses of fire-proof canvas mounted on wood frames with a one-inch air space between each layer. Overall there is a layer of primrose canvas, which is relieved by decorative pilasters bearing two-light electric brackets.

Stealing Via Radio

There is much talk about freedom of the air where wireless is concerned. But apparently a certain group of Dutch newspaper proprietors have objected to such freedom. It seems that they had arranged to receive special news matter by radio and certain of their rivals picked up the news and made use of it. So an action was brought for infringement of copyright, and fines were inflicted; but apparently the Dutch magistrates are seeking for further enlightenment. It looks as if the lawyers may have an opportunity of displaying their skill in a new direction.

Safety First Rules

At the annual convention of the National Electric Light Association in New York, the accident prevention committee gave out a set of rules for use in radio installations as a safety first measure. The committee is headed by Charles B. Scott of the Bureau of Safety of Chicago. The rules are as follows:

Never pick up a wire lying on the ground or dangling from a pole. The wire might be alive. Report fallen wires immediately to the police department or power company.

Never climb a pole to which wires are attached. They might be in contact with high voltage wires and consequently dangerous.

Never string wireless aerials over or under

Never string wireless aerials over or under any other wires. Should the antenna wires come into contact with the power lines the antennæ might become dangerously charged.

Always attach aerials to substantial supports so located that if either the support or aerial breaks it cannot come in contact with other wires.

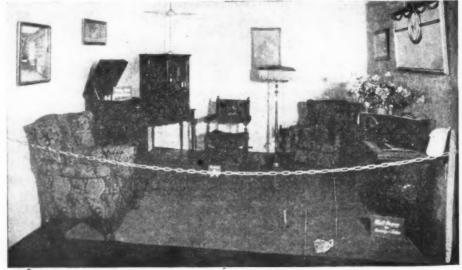
Remember that it is quite practical to operate a radio set with an indoor aerial. The indoor aerial is not so greatly inferior to the outdoor type as is commonly believed if it is of sufficiently low resistance.

Do not use a kite aerial.

Do not attach antennæ to chimneys. Chimneys were not designed for such purposes, and you might be down below when the bricks start falling.

New Catalog Issued

A new catalog has been issued by the H. H. Eby Mfg. Co. of Philadelphia describing and illustrating its line of binding posts. It consists of sixteen pages and is attractively printed on coated stock with a distinctive cover.



A Booth at the Recent Better Homes Exposition in Denver Showed the Part Played by Radio in the Entertainment Program of the Average Home

4

were butch enyers olay-

Nan in comse in neasarles

Chi-

round

ht be

high

under

wires s the

arged. sup-

ort or

with

to the

Chim-

s, and bricks

y the

lphia

ne of

xteen

coat-

Living Up to Code Requirements

Quoting A. Penn Denton, the capable chairman of the Code Committee for the Association of Electragists, the National Electrical Code is one of the best engineering standards to be found. It is a vital factor in the development of every branch of the electrical industry. It is of the utmost importance to all electragists, and it should be so looked upon by them.

Mr. Denton's words of praise for the Code, and his plea for its proper use by members of his organization, came about through the issuance of the latest revision of that praiseworthy document.

The first National Electrical Code was issued more than twenty-five years ago. It was prepared by the various insurance, electrical and kindred interests. From time to time it has been revised to keep in step with the rapid development of the electrical industry. Due to the untiring efforts of Mr. Denton and his able associates, the 1923 ed'tion is now looked upon as a contractor's Code.

What is wanted now is some way of enforcing the rules of this guide to standard practice. As it now stands, these rules are prepared by the electrical committee and recommended by the National Fire Protection Association. They then become the regulations of the National Board of Fire Underwriters. But they are not mandatory—hardly regulatory, for they are recommendations only.

Mr. Denton calls for the assistance of the entire electrical industry in endeavoring to improve the Code, and he asks for the help of all the allied interests in rigidly enforcing it. He believes it should be recognized as the outstanding engineering standard and put into practice to the very letter. To the electragists he says that strict adherence to Code rules will do more to eliminate unfair competition than anything else, and that such a practice will stabilize the business of the electragist.

It must not be forgotten that at the'r last annual convention the electragists went on record in recommending all metal installations and further improving wiring standards wherever possible. In the light of this evidence it should not be a difficult task to induce the installation branch of the industry to live up to all Code requirements and to offer help in enforcing the rules.

Chats on the National Electrical Code

BY HUBERT S. WYNKOOP, M. E.

Monthly Discussion of National Electrical Code Practices by Well Known Authority in Charge of Electrical Inspection, City of New York

Strength of Screw Shells

In this town we have several installment plan fixture concerns who evade our licensing requirements by selling chain fixtures equipped at the upper end with a lamp base attachment plug and at the lower end with a heavy opal enclosed shade. The fixture itself meets our requirements; and as an approved portable it may be installed with license; but we have been doubtful as to the weight which might properly be supported by the screw shell of a socket. Underwriters' Laboratories have made tests which indicate that the average shell will support a weight of 50 pounds indefinitely. So how can we object to a portable fixture weighing five pounds, if we are sure that the socket is well put together and that the fixture is substantial and securely fastened?

Defective Grounding

Investigation of a recent fire led to the following report: "A service conduit-bus line-ran along the rear of the buildings, each individual building being fed from a junction box on outside to the meter cabinet directly inside with a short run of lead covered armored cable, which was insulated from the house system at the meter cabinet. The house system was grounded by means of a run of armored cable from an outlet box to a water pipe and clamped to said pipe, the conductors in same not being used. This method was at the time approved, and was before the individual grounding of secondaries. In some manner the insulation on one service wire broke down, and the conductor became grounded to the service pipe, and presumably the insulation of service conduit broke down also. The actual fire damage was fortunately slight, but the burning insulation on the unused conductors caused considerable smoke."

Underwriters' Laboratories' tests have shown that the armor on a flexible cord or on a duplex armored cable has a conductivity of the order of No. 20 copper. It is not surprising therefore that a grounding wire composed of cable armor should fail.

Motors on Lighting Circuits

Should meat chopper, coffee grinder and other fractional horse power alternating current motors—larger than one-sixth or one-eighth—ever be equipped with an attachment plug? The claim is often made that a motor of this type will blow a 15 ampere, or even a 20 ampere, fuse. If this be generally true, certainly such a motor is not fit for attachment to a branch lighting circuit.

Grounding of Portable Motors

Inspectors should be careful not to demand the grounding of frames of portable motors operating at not over 150 volts. The Code (1001-b) recommends such grounding "when this can be readily accomplished." But opinions differ as to whether the adding of a third, or grounding, conductor to a portable cord feeding a fan motor or a drill can be "readily accomplished," in view of the fact that a special plugging receptacle and a special attachment plug would have to be provided. If we try to insist on making a rule out of this recommendation, existing conditions are bound to be upset pretty badly.

Use of Fibre

For years we have been reluctant to accept fibre as an insulating material owing to its propensity to warp when made damp; but for stage cable connectors it seems to be the one best material because it will withstand mechanical abuse so well. Now and again the question arises, and I have been at some pains to learn what the prevailing opinion is in relation to the general use of fibre. Those best informed seem to think that, as an insulating separator, fibre is all right if firmly held in place, as when used as a washer between the screw shell of a brass socket and the porcelain body, but that it is not suited for use as a support for current carrying parts which may be thrown out of alignment by its warping.

Grounding Lightning Arresters

Two members of the Electrical Committee who are best posted on the grounding rules have subscribed to the following statement:

Under rule 905i, which covers the grounding of lightning arresters, no ground conductor is permitted of less than No. 6 size. The rule also provides that the ground shall be of sufficient size to take care of the excess current caused by or following the discharge of the arrester. As I understand this device (used on overhead power systems in the central offices of the Bell telephone system), there is a possibility on the largest size that 1,200 amperes might flow to ground for one-half of a cycle. I do not think that anyone knows just what size wire should be used to take care of this current. Ordinary practice, however, is for lightning arresters on heavy circuits to use No. 2 ground wire (this is the practice which * * * follows and we have no trouble from this source). I would therefore suggest, as a reasonable interpretation of this rule, that for the 50 ampere units a No. 6 wire be required for the grounding wire and for 1,200 ampere units a No. 2 wire he used, and that for amperages between these two points the wire be graded down accordingly.

Switches in Canopies

The opening in an ordinary outlet box does not exceed four inches in diameter. Many of our flat back canopies are a foot or more long, vertically. What are we going to do with the fixture contractor who digs a hole in the plaster to receive the canopy switch, and then channels the plaster to receive the switch leads? You tell me!

Identifying Armor of Cable

In a few instances, where armored cable has proved defective after installation, we have been defeated in one attempt to fix responsibility owing to the fact that it carried no identification mark. This is a point which contractors and inspectors alike are prone to ignore; and yet it is important that the contractor guard against using outlaw material, and that the inspector refuse to pass it.

Ampere Capacity of Feeders

Our Commissioner, in the proposed amendment to our National Electrical Code, has specified 10 amperes per branch circuit, including spares on panel boards, as the allowance which must be made in calculating the necessary capacity of feeders and mains. This rating would apply also to main switches and busbars on panel boards, and on the basis of 15 amperes maxi-

mum on the branch circuit, would be equivalent to about 66 percent of what we used to call the "connected load." Doesn't this seem reasonable? I am informed that Underwriters' Laboratories have been making practically the same allowance in judging panel boards.

Anticipating Violations

Sometimes an inspector, if very alert, will note that the wireman is heading wrong, and yet hesitates to lodge a violation because the defect anticipated does not yet actually exist. This isn't always the best policy, as it sometimes results in unnecessary trouble. For example a contractor placed a service standpipe on the face of the sheathing boards of a cottage under construction, blocking the pipe out slightly, but not enough. When our friends from Sunny Italy got through slinging-I mean "slinging"—mortar, the pipe was buried in a ridge of stucco. The contractor said, "Why didn't you warn The inspector replied, "How could I lodge a violation until the masons got through?" Result: Expense and annoyance to all concerned. All this might have been avoided if a violation had gone forward promptly, phrased thus: "Standpipe so located that it will be covered by shingles, clapboards or stucco." It's easy to think these things out afterwards. I'm not at all sure that I would have anticipated this case if I had been the inspector.

Local Code Committees Chairman Denton Urges Members of A. E. I. to Be Active

As intimated in an article under his name in our January issue, A. Penn Denton of Kansas City has again become active in urging members of the Association of Electragists to form local code committees.

Mr. Denton is an executive committeeman of the A. E. I., is chairman of its Code Committee, and as such is a member of the Electrical Committee of the National Fire Protection Association. He has recently issued a bulletin to the membership of the A. E. I., which reads as follows:

The Code Committee of the Association of Electragists—International during 1923 undertook to stimulate interest on the part of members and the industry at large in a better National Electrical Code.

To this end your Code Committee issued one bulletin last spring addressed to all local associations, asking that they appoint a Code Committee representative from the ranks of their Association members, and that such representative organize a local Code Committee as follows:

The personnel of the Committee should be a contractor as chairman, the city electrical municipal inspector, the Underwriters' local inspector, a representative of the local central stations, preferrably a man from their service department, as he would be more closely in contact with the contractors' installations and problems. In those cities where union labor electrical workers are a factor and control most of the electrical wiring, it is advisable to ask them to appoint one of their number to serve with the other four members of this committee. Your Code Committee suggests, however, that you organize your committee first by selecting the first four members mentioned, then if agreeable to all members of the committee, you can invite in a representative of the I. B. E. W.

As a result of the first bulletin sent to our local associations, we have succeeded in organizing ten fairly active local code committees, but instead of this number we ought to have a local code committee in every city in the United States and Canada where there is electrical inspection.

You have all received and no doubt are working under the rules of the new 1923 edition of the National Electrical Code. There are many changes in this Code from the old one, and your International officers as well as the Chairman of your Code Committee have felt that local groups can aid materially in seeing that the new 1923 Code is properly enforced. Your International Association went on record at our last convention held in October in Washington, committing ourselves to a program which will ultimately provide, if possible, in our National Electrical Code, for an all metal electrical installation in all classes of buildings. If there are any of our members who have not read the resolutions passed at the convention upon this subject, they should immediately refer to their November ELECTRACIST and inform themselves.

Your Code Committee further appeals to you to aid in bringing about more uniform and rigid inspection in every city throughout the United States and Canada. If we will organize local

code committees we will find that we have the active and hearty support, not only of inspection departments, but of the central stations, jobbers and manufacturers as well. Let us take the lead in improving Code standards, and we will directly and materially improve our construction business to the end of eliminating much of the unfair competition we are meeting with today because of lack of uniformity in electrical installation methods.

It is a further hope and desire of your Committee that the work done by local code committees will result in furnishing to your Committee chairman from time to time information which he can pass back to the Electrical Committee to help them in the next and future revision of the Code. There is no work our Association can undertake during the next few years which can result in greater benefits to our membership than the improving of the present minimum Code standards by our leadership in this work.

Your Code Committee encloses herewith a questionaire which we ask that you read carefully, answer promptly, and mail to your Code Committee Chairman, A. Penn Denton, 319 East Seventeenth Street, Kansas City, Missouri. This questionaire will show you that if you are unable to locally get under way a Code Committee of your own, your Code Committee Chairman will personally write to those you would have coöperate with you in this work, thereby aiding you in the formation of this local group at the earliest possible date.

Let every member of the Association of Electragists-International put his shoulder to the wheel in this much needed work of improving electrical installation standards, and let no local Association delay in taking action as requested, and where you are able to form your own local code committee without the help of the Chairman, please send me the personnel of your committee at the earliest possible date. Your Chairman will personally instruct all local code committees, after they are organized, as to their method of procedure when organized. Your International Association and its officers will appreciate your coöperation in this connection and your Code Committee Chairman looks forward to hearing from each local Association promptly. We ask that all code committees at present organized please write your Chairman.

the the

0. 4

nding luctor The all be excess charge device e censtem), e that r onemyone

nyone sed to actice, heavy his is and e). I ole in-

mits a

outlet es in canoically.

plas-

, and

ve the

e mored er inin one ing to

ontracone to nat the outlaw refuse

oposed ectrical es per res on which neces-

mains.
o main
boards,
maxi-

What You Owe to Your Profession

A business association is the organized strength of a group of men joined together for a purpose.

Roosevelt said: "Every man owes some of his time to the upbuilding of the profession from which he makes his living."

The opportunity to make a living in your profession, the market for your services, the conditions of fair play—these are not matters of chance.

Other men through association with each other have created that market and developed the conditions.

No man can long continue to profit through the opportunities created by others without paying some of the debt he owes to the "upbuilding of the profession from which he makes his living," and maintain his self respect and the esteem of others.

Successful men give most freely of their valuable time to associations—not because they are successful but because the same force that brought them success impels them to assist in upbuilding their profession.

"Every man owes some of his time", as well as his money, to the upbuilding. Paying for a membership does

not close the obligation. Every member needs to contribute time, thought, and action to his association to be an "active member".

The upbuilding of the profession cannot be done by an association except through its members. The "canon of ethics" or "code of practice" of an association may be drawn up and adopted collectively—but it must be observed individually to be effective.

Of nearly 15,000 electrical contractor-dealers in the country today only about 3,000 belong to their group organizations that are striving to create conditions of fair play for the whole.

Every electrical contractor-dealer should belong to four business organizations. First, his local contractor-dealer association; second, his international Association of Electragists; third, his local electrical league; and fourth, the Society for Electrical Development.

The pages which follow tell some of the story of the men who are paying their debt to the upbuilding of the profession from which they make their living.

Are you among them?



ORGANIZATION ACTIVITIES

STATE CHAIRMEN AND SECRETARIES

State	Chairman	Secretary	State	Chairman	Secretary
Ontario, Canada	Harry G. Hicks, 203 Church St., Toronto	J. A. McKay, 24 Adelaide St., W., Toronto	Maryland:	A. C. Brueckmann, Keyser Bldg., Baltimore	C. Philip Pitt, 7 St. Paul St., Baltimore
British Columbia	S. E. Jarvis, 570 Richards St., Vancouver	R. A. Graham, 1929 Pender Street, W.	Michigan:	Henry Roseberry, 41 Pearl St., Grand Rapids	H. J. Shaw, 613 Lincoln Bldg., Detroit
Colorado:	J. Fischer, 213 15th St., Denver	H. Alex Hibbard, E. & C. Building, Denver	Missouri:	A. J. Dunbar, Frisco Bldg., St. Louis.	G. E. Haarhaus, St. Louis
Connecticut:	Tryon Smith, 247 State St., New London		New Jersey:	Geo. E. Davis, 23 Central Ave., Newark	
District of Col.:	Frank T. Shull, Elliott St., Washington	H. R. Harper, 635 D St., N.W., Washingt'n	New York:	F. A. Mott, 29 St. Paul St., Rochester	H. F. Janick, 29 St. Paul St., Rochester
Indiana:	T. F. Hatfield, 102 S. Meridian St., Indiana's	A. I. Clifford, 507 Odd F. Bldg, Indianapo's	Ohio:	C. L. Wall, 212 S. Main St., Akron	Walter R. Keefer, 939 E. McMillan St., Cin'nati
Iowa:	Louis L. Corry, 510 Brady St., Davenport		Pennsylvania:	R. W. Keck, Allentown	M. G. Sellers 1518 Sansom St., Philadelphia
Kansas:	C. S. Smallwood, 1017 N. 5th St., Kansas City	Arthur Tucker, 619 Jackson St., Topeka	Tennessee:	P. W. Curtis, Chattanooga	J. A. Fowler, 118 Monroe Ave., Memphis
Louisiana:	Robley S. Stearnes, 624 Carondelet St., N. Oreleans	I. G. Marks, 406 Mar. Bk. B., N. Orleans	Wisconsin:	L. G. Ross, 1225 Tower Ave., Superior	H. M. Northrup, 25 Erie St., Milwaukee

624 Carondelet St., N. Or	eleans 406 Mar. Bk. B., N.	Orleans	1225 Tower Ave., Superior	25 Erie St., Milwauk
L	IST OF LOCAL A	SSOCIATIONS AND	MEETINGS	
STATE AND CITY	LOCAL SECRETARY	STREET ADDRESS	TIME OF MEETING	PLACE OF MEETING
	LOCAL SECRETARY	STREET ADDRESS	TIME OF MEETING	PLACE OF MEETING
ALABAMA	T D 3123	222 37	Tuesday 10 a m	
Sirmingham	J. R. Wilcox	313 North 19th St.	Tuesday 10 a. m.	Members' Offices
ARIZONA	Frank Sigler	Sigler Electric Co.	Wednesday 5 p. m.	Members' Offices
ARIZONA			The state of the s	D-011 - D-1
hoenix	E. A. Cummings,	***********	Tuesday 4 p. m.	Builders Exchange
CALIFORNIA	M- W-'		Fook Wook Poidon	
naheim	Mr. Waite J. M. Gregory	O-Md	Each Week, Friday	Oabland
erkley	J. M. Gregory	Oakland	Friday 8 p. m. 1st & 3rd Monday	Oakland
ovina	F. Rambo	11/0 D	Tuesday Francis	Ontario
resno	Clyde F. Smith A. H. Rosenburg Irvin C. Bruss	1162 Broadway	Tuesday Evening	Comm. Club
ong Beach	A. H. Rosenburg	So. Cal. Electric Co. 118 East 3rd St.		Municipal Club
os Angeles	J. Gregory	Pacific Building	Tuesday 8 p. m.	Pacific Building
aklandan Francisco	J. Gregory	Pacine Building	12 Noon, Thursday	States' Cafe
an Francisco	A. Elpins	165 Jessie St. 1128 Mission Street	12 Noon, Inuisuay	Cham Com Plde
outh Pasadena	J. Jacobs		Tuesday 6:30 p. m.	Cham. Com. Bldg. Pin Ton Cafe
an Nuys	Los Angeles Ass'n.		i desday 6:50 p. m.	Fin Ion Care
COLORADO	Alem Williams	P & C Puilding	2d & 2nd Tuesdays	F & C Building
enver	Alex. Hibbard	E. & C. Building	2d & 3rd Tuesdays Friday Nights	E. & C. Building Col. Springs
lanitou	TT A.b		2nd Tuesday	Commerce Club
ueblo	H. Ashcraft		and Aucaday	Commerce Club
CONNECTICUT	We Cook	Want & Wassess	let Wednesday	Hartford
artford	Mr. Cook	Hart & Hegeman	1st Wednesday	Hartford
ew Britain	F. Mulvehill	Com Links & Borne Co	2d Tuesday Fuenis	Buildan Fraham
DISTRICT OF COLUMBIA	D. B. Neth	Conn. Light & Power Co.	2d Tuesday Evening	Builders Exchange
DISTRICT OF COLUMBIA			24 Thursday	Dames Harri
Vashington	*******		2d Thursday	Dewey Hotel
FLORIDA		Colombia Co	tos Turadan	100 W Don Street
acksonville	M. A. Ladd	Stinson Electric Co.	1st Tuesday	108 W. Bay Street
GEORGIA	C. E. Pullen	Pullen-Zohl Co.	**********	
GEORGIA			10 20 P.11	D. C. ET D.
tlanta	W. C. Drake	Ga. Ry. & Power Co.	12:30 Friday	Dafodil Res.
avannah	Sylvan M. Byck	141 Bull Street		00001.000000000000000000000000000000000
ILLINOIS				
Master Contrs. Ass'n,	J. W. Collins F. J. Boyle E. O. Weatherford	179 W. Washington St.	2nd & 4th Wednesdays	Lumbermen's Exchange
Master Contrs. Ass'n,	F. J. Boyle	31 West Lake St.	***************	***************************************
Decatur	E. O. Weatherford	114 E. William St.	1st Wednesday	Y. M. C. A.
Pecatur pringfield	C. A. Meadow C. F. Broderick	114 E. William St. 107 E. Adams St. 317 E. Broadway		
ast St. Louis	C. F. Broderick	317 E. Broadway	Saturday 2 p. m.	Arcade Building
a Salle	Edward Blaine		1st & 2nd Tuesday	Post Hall
uincy	John Harbison	18th & Broadway	2d & 4th Wednesday	2141/2 No. 6th Street
Quincy	John Weishar		Monthly	
treator	William Schroder	613 Tyler Street	0.00	
ireator INDIANA				
vansville	I. A. Welburn	404 Main Street	Every Friday	Y. M. C. A.
ary	A. B. Harris E. V. Knight	570 Washington St.		
ndianapolis	E. V. Knight	307 N. Penn. St.	Every Thursday	Hotel Lincoln
eru	J. B. Johnston	307 N. Penn. St. West 5th Street 832 N. St. Louis 120 E. Market St.	Every Thursday 2d & 4th Monday	Labor Hall
outh Bend	Mr. Moran, Jr.	832 N. St. Louis	1st Tuesday	B. & T. Ex. Building
Varsaw	L. F. Meyers	120 E. Market St.	Wednesday Evening	
Varsaw IOWA				
Davenport	Louis F. Cory		Monday 6 p. m.	Chamber Com.
ioux City	F. H. Abbott		Monday 6 p. m.	Jackson Hotel
Vaterloo	H. L. Hileman	600 Bluff Street		
KANSAS				
alina	Geo, H. Shanks	146 So. Santa Fe St.	1st Thursday	
opeka	H. S. Lee	816 Kansas Ave.	Monday Noon	Elks' Club
Vichita	H. S. Lee L. A. Harris	446 North Main	Every Tuesday 7:30	United Elec. Co.
Vichita KENTUCKY				
ouisville	Chas. Daubert	921 S. Third St.	2d, 4th Thursdays	B. of T. Building
aducah	W. R. Kitterjohn	************	Last Thursday	*************
LOUISIANA				
lew Orleans	Frank Gacheck	406 Marine Bank Bldg.	2 p. m. Monday	406 Marine Bank Bld
hrevenort	Percy Elliott	Elliott Elec. Co.	Every Monday	
hreveportMAINE	Terey Dinote	Dillott Dicc. Co.	2.0.7 220.0027	
Portland	Lyman P. Cook	12 Free Street	On Call	Graymore Hotel
ortland MARYLAND	Dyman 1, Cook	as a rec beleet		
Baltimore	George Robertson	1	Bi-monthly	Soathem Hall
MASSACHUSETTS			1	
itchhure	R M Gowell		1st Monday	Fay Club
itchburg	H W Porter	24 West St	2nd Monday	El. Light Station
laverhill	C. L. Howe	897 Washington St	2d Monday ea. month	Various Places
lewton	R. M. Gowell H. W. Porter C. L. Howe Mr. Ayers H. J. Walton J. W. Coghlin	24 West St. 897 Washington St. 103 Rochelle St.		Chamber of Comm.
pringfield	H I Walton	Malden Flee Co	Monthly	Various
Vest Medford	I W Combin	Malden Elec. Co. 259 Main St.	2d Thursday	44 Front Street
Worcester	J. W. Cognin	437 Main St.	Lu indisday	The state of the s
MICHIGAN			Every other Tusday	Post Tavern
Battle Creek	II Cham	611 Lincoln Building	Last Thursday	G. A. R. Hall
Detroit	H. Shaw	613 Lincoln Building		
Flint	J. Markle	718 S. Saginaw	Tuesday Noon	Association of Com.
Grand Rapids	Henry Romyn M. Randall	718 S. Saginaw 40 Ionia Av., N. W. Exchange Place	Tuesday Noon	Chamber Commerce
Kalamazoo	M. Kandali	Exchange Place		
Saginaw	E. T. Eastman	209 Brewer Arc.	************	

STATE AND CITY:

ORGANIZATION ACTIVITIES—(Continued.) LOCAL SECRETARY STREET ADDRESS TIME OF MEETING PLACE OF MEETING

SINIE AND CITE	LOCAL SECRETARY	STREET ADDRESS	TIME OF MEETING	PLACE OF MEETING
Dulath				
Duluth	D. Ehlert W. I. Gray	210 W. 1st St. 511 S. Third St.	Subject to Call	
St. Paul	E. Hoseth	993 Selby Avenue	2d & 4th Monday 2d & 4th Tuesday	Builders' Exchange Elk's Club
Kansas City	R. L. Hutton	212 Admiral Boulevard	6:30 p. m.	
St. Louis NEBRASKA	E. Bowman	644 Century Building	6:30 p. m. 2d Tuesday 1st Wednesday	University Club American Hotel
Lincoln	G. G. Kingham	142 S. 12th Street	1st & 3rd Monday	
	E. H. Brown	1818 Harvey St.	2d and 4th Thursdays	C. of C. Building Builders' Exchange
NEW HAMPSHIRE	F. C. Hatch	Kittery	2d & 4th Wednesdays	
Atlantic City	P P Weigh			***********
lersey City	F. P. Wright Wm. Doellner	16 Ohio Ave. 843 Bergen Ave.	1st Thursday	Malatesta Hotel P. S. Building
Long Branch	Chas. Maggs George E. Davis H. M. Desaix	462 Bath Ave.	1st & 3rd Mondays	Commercial Hotel
Paterson NEW YORK	H. M. Desaix	23 Central Ave. 88 Ellison St.	lst Monday Last Friday	23 Central Ave. P. S. Building
Albany	F A Stephens	71 Trinity Place		
Binghamton	E. A. Stephens A. H. Hyle H. F. Walcott A. Stone E. P. McCormick	***********	3rd Thursday	Pekin Restaurant
Brooklyn Electric Club	H. F. Walcott	Pacific St. and 3d Ave. 503 Myrtle Ave.	1st & 3rd Wednesdays	Johnston Building
Buffalo Cooperstown	E. P. McCormick	55 Washington Street	Fridays	507 Elec. Building
Endicott	B. B. St. John A. H. Hyle W. F. Coombs	Oneonta Binghamton	3rd Tuesday Tuesdays	Vanon Chamber Commerce
Glens Falls	W. F. Coombs	21 Main Street, S.		
Kingston Nassau-Suffolk	Henry Lund M. C. Rivenberg Edwin M. Seaman	309 Main Street	3rd Monday	Manufacturers Ass'n.
Nassau-Suffolk	Edwin M. Seaman	Mineola Tottenville		************
New Brighton N. V. Section, No. 1	E. L. Taylor J. W. Hooley	45 Barclay Street	1st Thursday	Building Trades
Independent Section No. 3	Albert A. A. Tuna	127 East 34th St.	2nd and 4th Wednesdays	226 W. 58th St.
Olean	H. C. Thuerk B. B. St. John	Olean L. & P. Co.	Monthly	Various Stores
Oneonta Rochester Saratoga Springs	H. F. Janick	29 St. Paul Street	3rd Thursday 1st and 4th Mondays 2d and 4th Thursdays	Eggleston Hotel
Saratoga SpringsSchenectady	H. F. Janick W. F. Camp	So. Glen Falls	2d and 4th Thursdays	Saratoga and Glens Falls
Syracuse Tottenville	H. N. Smith	McClellan St. P. O. Box 809	Subject to Call 1st and 3rd Mondays	
Troy	Mr. Spengler H. N. Smith W. Taylor H. W. Boudey W. C. Ballda L. B. Smith	P. O. Box 809 Tottenville, S. I. First Street	1st and 3rd Thursdays	St. George, S. I. Gas Office Elks' Club Utilities Building
Utica	W. C. Ballda	228 Genesee Street Roth Block	1st Tuesday 1st Tuesday	Gas Office
Watertown Woodmere	L. B. Smith	Roth Block Westbury	3rd Fridays	Utilities Building
Yonkers OHIO	Geo. La Salle Mr. Mayer	Manor House Sq.	Monthly	************
Akron	Harvey Uhl	211 Water Street	Alternate Thursdays	
Bellaire	J. Blumberg H. S. Hastings W. R. Keefer Frank Monahan	Bellaire	Call of Secretary	2nd Nat. Bank Bldg. Bellaire
Cincinnati	W. R. Keefer	Industrial Corporation 939 E. McMillan	1st Tuesdays Tuesday 3 p. m.	Industrial Com. Chamber of Com.
Columbus	Frank Monahan O. A. Robins	1761 East 12th Street	Tuesday 3 p. m. 1st and 3rd Thursdays	Hotel Statler
Dayton	Clarence Carey M. H. Gray	1517 Franklin Ave. 1107 Bron Ave.	Every Thursday 2d & 4th Mondays	Hotel Statler Girls Athletic Club Builders' Exchange Various
Dayton Springfield Steubenville	M. H. Gray D. C. Hartford		On Call 1st Wednesday	Various
Toledo	J. Kelly	16 Huron Bldg.	Every Wednesday 8 p. m. Monday Noon	Nat. Exchange Bank 16 Huron Building
Youngstown OREGON	F. F. McBride	Builders' Exchange	Monday Noon	Y. M. C. A.
Medford PENNSYLVANIA	S. C. Clark	Cal. Ore & Power Co.	3rd Monday	*************
Allentown	(See Bethlehem)			7
BethlehemCatasauqua	A. W. Hill (See Bethlehem)	500 Main Street	Last Thursday	At call of President
Dubois	C. E. Blakeslee	**********	Monthly	*************
Easton Erie	(See Bethlehem) Earl Stokes	Duildass' Exchange	Monthly	
Lancaster	A. Deen	Builders' Exchange 434 S. Sheppen 1518 Sansom St.	3rd Friday 2nd Thursday	Builders' Exchange Underwriters Office
Pittsburgh	M. G. Sellers Fred Rebels	1518 Sansom St.	2nd Thursday 1st Thursday	1518 Samson St. 4th Avenue
Scranton	A. J. Fowler	4th Avenue Board of Trade Bldg.	Tuesdays	Zenke's
Wilkes-Barre	C. E. Blakeslee Ambrose Saricks	Penn. Pr. & Lt. Co.	Mondays Tuesday Evenings	Penn. Pr. and Lt. Cc
York RHODE ISLAND	A. E. Harris	E. King Street	2d & 4th Tuesdays	***************************************
Providence	Herbert C. Hill	35 Westminster Street	1st Thursdays	*****
SOUTH CAROLINA Charleston	J. P. Connolly E. L. Cashion	Elec. ContrDealer Assn.	-	
Columbia	E. L. Cashion E. C. DeBruhl	Sumter, S. C. Ideal Electric		***********
Greenville TENNESSEE	E. C. DeBruhl	Ideal Electric	Wednesday	***********
Chattanooga	Carl Schnider	412 Kirby Avenue	Noons	Manhattan Cafe
Memphis	H. M. Moses H. A. Street	615 Market Street 285 Madison Av.	Monthly Every other Wednesday	Railway Light Co. Allyn Cafe
Nashville TEXAS	J. Shannon	8 Ave. and Church		Tribune Hotel
Dallas	H. A. Brewster	409 S. Eway	On Call	409 So. Eway
El PasoUTAH	R. S. Murray	1515 No. Campbell	Ev. Tuesday	303 Martin Building
Salt Lake City	Gus. Forsberg	69 E. 4th South	Wednesday 12:15 p. m.	Newhouse Hotel
VIRGINIA Lynchburg	W. M. Elliott	Lynchburg	1st Wednesday	Local Stores
Norfolk Richmond	K. D. Briggs	Arcade Building Jefferson and Grace Sts.	Wednesdays	Old Colonial Club
WASHINGTON	W. A. Cutlett	Jefferson and Grace Sts.		****************
Seattle WISCONSIN	Rush McCarger	3rd and Madison St.	Thursdays	Elk's Club
Green Bay	John B. Tingley E. H. Herzberg	223 Cherry St.	1st Thursday	Nicolet Building
Milwaukee Racine	E. H. Herzberg F. H. Patrick	156 5th Street 1545 W. Boulevard	1st Monday each Month	456 Broadway
CANADA		1343 W. Boulevard	1st Tuesday	Racine Building
CalgaryGuelph	E. W. Beard W. E. Lemon K. J. Donoghue	The Gringer Co.	Bi-weekly	Chairtie Plan C
Hamilton	K. J. Donoghue	co N. Electric Co.	2d and 4th Monday	Christie Elec. Co.
Kitchener Montreal	G. C. L. Brassart	clo Doerr El. Co. 65 McGill College Ave.		***************************************
Ottawa	O. S. Leyes G. C. L. Brassart A. C. McDonald A. J. Desand J. A. McKay	128 Osgoode St.	Monday 8:00 p. m.	Elec. Inspection Office
	A. J. Desand	Electric Shop 24 Adelaide St.	1st and 3rd Wednesday 2nd Tuesday	Chamber Commerce Board of Trade
St. Catherine	J. A. McKay	27 Auciaine St.		
Toronto Vancouver	J. F. Hutchinson	2427 Granville St.	Every Tuesday	425 Pacific Building
Toronto	J. F. Hutchinson A. H. Cook R. N. Elgar W. H. Mackenzie		Every Tuesday 2d and 4th Thursdays	425 Pacific Building Notre Dame Building

Wisconsin State Meeting Important Business Transacted at Annual Convention Held January 17-19

The seventh annual convention of the Wisconsin State Association of Electrical Contractors and Dealers was held at the Hotel Pfister, Milwaukee, January 17, 18 and 19. A meeting of the executive committee took place during the opening morning session of the first day, followed by a general business session which lasted until noon.

In the afternoon of the opening day an address on "The Federal Reserve System" was given by W. K. Adams, vice president of the First Wisconsin National Bank of Milwaukee, and a debate was carried out on the following resolution, E. D. Herzberg taking the affirmative side and P. C. Burrill the negative, with A. L. Pond and J. P. Pulliam acting as the judges:

Whereas, The statement has been made that the electrical contractor-dealer is not a

merchandiser, and

Whereas, It has also been stated that the electrical contractor-dealer is not the proper channel for the distribution of electrical merchandise, and

Whereas, The tendency seems to be for the department store and the hardware store to sell large quantities of electrical merchandise; it is therefore.

Resolved. That the electrical contractordealer having proper knowledge and equipment is the only one in the industry capable of servicing electrical merchandise that is offered to the public and is therefore the proper person to merchandise this material.

Interesting angles were brought out by both Mr. Herzberg and Mr. Burrill and the former's side was accorded the decision of the judges.

Several interesting and instructive talks were made during the morning of the second day, the 18th. H. P. Sanburn of the General Electric Company presented the subject, Merchandising Fundamentals; and G. C. Neff, vice president Eastern Wisconsin Electric Company, took as his topic, Rural Lines.

Show 'Em How, the new motion picture produced by the Westinghouse Lamp Company, was shown in the afternoon. Laurence W. Davis, general manager of the Association of Electragists, gave a straight from the shoulder talk on Putting the Association at Work in Your Business, and Meade Brunet, district sales manager of the Radio Corporation of America, talked on the subject of Radio.

The annual banquet held during the evening of the second day was put on in the famous Fern Room of the hotel, and L. W. Burch acted as toastmaster at the dinner. An address was made on

How to Raise Your Boy to be a High Grade Contractor-Dealer, and this was followed by an informal dance which was enlivened by entertaining vaudeville selections and the giving away of souvenirs and prizes.

On Saturday, January 19, the final day, a general business session was heldat which new and unfinished business was transacted and considerable time devoted to a discussion of topics and suggestions by members. An election of officers took place, the result of which was the election of L. W. Burch, president, and the reëlection of Mr. Northrup and Mr. Acker as secretary and treasurer, respectively. The ladies enjoyed a planned program of entertainment.

Lehigh Valley Meeting

At a recent meeting of the Lehigh Valley Electrical Contractors' Association of Pennsylvania, the title of that organization was changed to the Lehigh Valley Electrical Association. The cities included in the organization are Lehighton, Palmerton, Nazareth, East Stroudsburg, Allentown, Emaus, Catasauqua, Bethlehem, and Easton, all in the state of Pennsylvania, and Phillipsburg, New Jersey, which is just across the river from Easton.

This association meets regularly on the last Thursday of every month in the city specified by the president. The officers are Russell J. Morrison of Easton, President; E. H. Odenheimer of Allentown, vice president; E. W. Weaver of Allentown, treasurer; and Arthur W. Hill of Bethlehem, secretary.

A. E. I. Division Convention Members of Eastern Division to Meet in New York City March 18

As announced last month, a convention of the Eastern Division of the Association of Electragists will take place in New York City on March 18, which it is definitely decided to hold at the Hotel McAlpin. The semiannual meeting of the Executive Committee of the A. E. I. will be held the day preceding and it is planned to give the eastern members a more intimate knowledge of the work of the International Association through having talks by Executive Committeemen at the Divisional Convention.

Meetings of the Open Shop and Union Shop Sections of the Association will be held during the morning, and subjects of vital importance to electragists of the Eastern Division are to be

taken up in the afternoon. The afternoon session will start at two o'clock.

According to the tentative plans the talks by the Executive Committeemen are to be given by those who are serving on important chairmanships of International committees and will be particularly interesting in showing what is being done internationally by the Association.

A banquet is to be held in the evening at which there will be but two speakers, both well versed on the subjects to be presented. Dancing will follow the dinner and members are urged to bring their wives and sweethearts.

A definite schedule of events will be printed in the March number.

New State Association

Carolina Electragists Start New Year in Right Way

For some time past the members of the Association of Electragists in the states of North and South Carolina have wanted a state convention. Headquarters was in sympathy with such a movement, but not having enough fieldmen to cover all sections at one time, action was necessarily delayed.

After working in those states two weeks and sounding out members on the plan, Arthur P. Peterson of the A. E. I. held a meeting at Charlotte, N. C., on January 5, at which time an organization was perfected.

About fifty representative contractordealers were present and were welcomed by C. O. Kuester, executive secretary of the Charlotte Chamber of Commerce, in the rooms of which the meeting was held.

Mr. Peterson was introduced and talked on the value of the trademarked word electragist in connection with the installation work and merchandising business of the electrical contractor-dealer. He dwelt on the assurance of safety and service to the public and conducting business only on high grade lines. He explained the objects and purposes of the A. E. I., and the requirements necessary to become associated with that organization.

After discussing matters of local interest and appointing committees to follow up such matters, it was decided to form an association for state activities. The title of the newly formed organization is the Carolina Association of Electragists, so that only members of the International body are eligible to membership. There are no state dues, the members being assessed

a certain amount for the expense of conventions or any activity for which funds may be required.

N. L. Walker of Raleigh, N. C., well known to annual convention attendants as Raleigh Walker, was elected state chairman, and F. E. Robinson, who is an electrical contractor-dealer of Charlotte, was elected state secretary.

The next meeting of the new state association will be held on April 5 at Greensboro, N. C., and plans are under way to hold a summer meeting in South Carolina. Committees were appointed to provide speakers and entertainment for the April meeting, and the three Greensboro members present promise an enjoyable meeting.

Following the formation of this new association Mr. Peterson spent several days in North and South Carolina calling on members and writing applications for new members. He then continued his trip into Georgia, and other sections of the sunny Southland.

New York Elections

The Independent-Associated Contractors and Dealers' organization of New York City held its installation meeting of newly elected officers at the Hotel Astor on January 23. Following is the result of the election, which took place on December 26: President, Louis Freund; first vice president, S. MacNutt; second vice president, S. J. O'Brien; treasurer, A. Lincoln Bush; recording secretary, Albert A. A. Tuna; and financial secretary, Walter Birkel.

At the last regular meeting of the Electrical Contractors of Brooklyn and Queens officers for the ensuing year were elected as follows: President, Charles A. Soper; vice president, J. J. Schneider; secretary, Henry F. Walcott; treasurer, Hugo Tollner; and auditors, D. Davidson, J. J. O'Brien and Frank Egan.

Toronto New Year Plans

In planning its promotional campaign for the new year, the main course of which is charted as a result of a meeting in December, the Electric Service League of Toronto is endeavoring to keep all its work on a direct, tangible basis.

The major activities for various months are as follows, beginning with February. In January preparation was made for an intensive drive in the spring in the interests of the Red Seal campaign: February—Campaign

to obtain contractor-dealer members; March—Old home rewiring campaign; April—Opening of Red Seal "spring push"; June—Bride gift campaign; September—Bride gift campaign; October—Store and commercial lighting campaign; December—Christmas campaign. Extra activities to be undertaken if possible include a house illumination campaign to encourage sales of fixtures and lamps, a school essay contest, and district organization work. Educational work will be carried on throughout the year by the means of publicity.

The old home rewiring campaign is of special interest. It is estimated that Toronto has about 60,000 houses with antiquated wiring—lacking in adequate service, wall switches, passable fixtures and convenience outlets. The League hopes, by the coöperation of real estate men and through the means of special publicity, to induce a large proportion of the owners of old houses to wire up,

Starts This Month

The thrilling story of a down and out contractor-dealer who became a real electragist. The convention play storyized. Read it today. See Do It Electrically, on page 16 of this issue. Don't miss this interesting story.

and if a deferred payment system can be successfully applied, it is believed that big results should be obtained.

The question of an electric home was discussed and the directors of the League agreed that the industry would profit more in actual business results by concentrating on the Red Seal campaign the labor and money necessary to have a successful electric home. It is believed that the Red Seal campaign works quietly, steadily and persistently, week by week, and brings pressure to bear on the builders, the owners and the wiremen. A scheme is to be worked out to educate the whole public on the Red Seal standard.

The League is prepared to send electrical reading matter to any newspaper in Ontario. Regular educational contributions will be forwarded through members to the various papers in the various cities. It is thought that the field for this line of business building activity is hardly touched, as there has not been until recently any source from which local newspaper propaganda in the province could be organized.

Philadelphia Festivities

The Electric Club of Philadelphia had been organized for some time and was supposed to have just about reached its quota of members. Then some of those who could see further than a stopping point decided that a membership drive was in order.

When the campaign for new members started, the club numbered less than two hundred members; something like a hundred and fifty were added, so it now is safe to say that the Electric Club of Philadelphia has a membership of more than three hundred and fifty.

New officers were also elected at about the close of the membership campaign, and so it was deemed advisable to celebrate the two events in a fitting manner. Accordingly on Monday, December 17, a big get together meeting was held at the Bellevue-Stratford, preceded by such a dinner as is not known outside of Philadelphia.

Fred Shepard was toastmaster and the speakers were Dr. Niles, Chaplain Dickerson of the Navy Yard, and Arthur Eaton, a local attorney. Also there was an interesting musical program, made up of classical selections as well as the jazz variety.

The rejuvenated club is planning on some important activities for the future, announcements of which will follow as they develop. The new officers are as follows: Edwin Hulley, president; A. L. Hallstrom, vice president; Joseph G. Crosby, treasurer; H. A. Parsons, secretary.

New League Officers

At the annual meeting of the New York Electrical League, held at Hotel Astor on January 10, the following officers were elected: Walter J. Drury, president; Albert Goldman, first vice president; S. E. Kimball, second vice president; Lawrence L. Strauss, treasurer; David T. Brown, secretary.

The speaker and guest of honor at the luncheon which preceded the election was Walter H. Johnson, president of the National Electric Light Association and second vice president of the Philadelphia Electric Company.

Mr. Johnson stated that he firmly believed in get together movements, as they work for harmony in the industry. Coöperative activities, he said, have been referred to as sympathetic competition, which he believed should be encouraged and not allowed to become what is known as synthetic competition. He also said that he thought the little fellows in business should be helped along the way. "The thing to do," he said, "is to try to direct them toward proper channels of good business, teach them cost accounting, educate them to do better work at right prices, and instruct them as to legitimate means of financing their requirements. Any co-öperative assistance should not be given merely as a matter of sentiment, but because, in the final analysis, it will pay."

Two Electric Home Exhibits

It is expected that the electric home being constructed under the direction of the electric league of Worcester County, Mass., will be completed by March and exhibited to the public sometime in April. The house will not be maintained permanently by the league, however, but will be placed on the market as soon as the public inspection is over.

Members of the Essex County Electrical Club of Salem, Mass., are actively engaged in making plans for an electric home exhibit which it is intended to open for a certain length of time to the public in the spring.

Market Was Interesting

Affair at Chicago, Largely Attended, Was Declared a Complete Success

A lively crowd attended the annual Fixture Market which ran from January 21 to 26 at the Hotel Sherman in Chicago. The many phases of this great affair were all most successful, including the manufacturers' exhibits, the educational "Notice the Lighting Equipment" exhibits, and the convention itself. Many authorities from all branches of the electrical industry were in attendance and each convention session was largely attended by lighting men from all parts of the country.

Among the high spots on the convention program were a series of addresses by Harry Newman Tolles of the Sheldon School, Chicago, in which the speaker dealt with the foundation principles of a successful dealer's business. Chalk talks were given by Robert Parrish of The Cassidy Company, New York City, the general subject of which was "Period Design."

A. L. Oppenheimer, president of the Enterprise Electric Fixture Company, Cleveland, talked on the "Best Method for Disposing of Slow Moving Stock".

A sales skit was carried out under the direction of Charles Gainey of the Barnes-Gainey Company of Detroit, following out the practice of last year, and this was unusually interesting and instructive, containing as it did many practical suggestions and ideas for lighting equipment dealers.

An opportunity for the dealer to learn more about glass and why the sale of certain kinds should be pushed was afforded in a twenty minute talk by Robert Zanouth, president of the Netting Company of Detroit, on the "Advantages for a Dealer in Promoting the Sale of Glassware."

"Show Room Display and Courtesy to Customers" was the subject of a talk by R. D. Paxon of Sterling & Welch, Cleveland, through which his long experience in the lighting equipment business was explained for the benefit of those desiring to know more about this important phase of the business. A special message was brought to the dealers from the manufacturers' viewpoint by Herman Plaut, president of the National Council.

C. J. Netting of Detroit, former president of the Dealers' National Association, delivered an important message which dealt with the results obtained in his city through urging and insisting in local advertising and sales talks that at least three percent of the cost of a building must be devoted to lighting devices.

Round table discussions were featured and these were presided over by acknowledged leaders in the subjects presented. "Shop Cost and Operation" was discussed by E. R. Gillett, president of the Gillett-Hoehler Company of Toledo. W. L. Collins presented the subject "Working with Architects," and another conference which was in charge of Mr. Collins, who is secretary of Beaux Arts, Pittsburgh, was on "New and Remunerative Lines for Lighting Equipment Dealers". "Methods Employed by Dealers for Compensating Salesmen" was lead by G. F. Laube, an electragist of Rochester, New York.

In an earnest effort to show dealers where and how they can get what they must know to realize the greatest benefit from the slogan, "Notice the Lighting Equipment," an educational exhibit was formed. One part displayed the various approved forms used for bidding, contracts. invoices, statements, letterheads, order blanks, acceptance forms, requisition blanks, shop orders, estimate blanks, envelopes, advertising folders, circular letters, and other similar material. The second section con-

sisted of books on period design, interior decoration, lighting and lighting equipment, and other subjects that a dealer must know about to keep informed on uptodate practice. A third department was devoted to the different trade publications showing how each has contributed to the dealer's welfare in advancing the use of better lighting equipment.

This issue of THE ELECTRAGIST goes to press too early to carry a detailed report of the proceedings, but suffice it to say that this year's Fixture Market was a success, which was largely due to the untiring efforts of Charles H. Hofrichter, the efficient business manager.

Board of Trade

The Electrical Board of Trade of New York City held its annual election on Wednesday, January 16, with the following result: Arthur Williams, president; W. J. Drury, W. C. Peet and Theodore Beran, vice presidents; J. P. Ryan, treasurer. These were the original officers of the Board, but as a year had not expired since it was organized, it was deemed advisable to continue them in office.

Safety Conference

At the annual meeting of the Electrical Safety Conference held in New York City on January 9, the following officers were elected: A. R. Small, chairman; R. W. E. Moore, vice chairman; R. B. Shepard, secretary-treasurer.

The Association of Electragists is an associate member of the Safety Conference, being represented by A. Penn Denton of Kansas City, with W. Creighton Peet of New York City as alternate.

N. E. L. A. Convention

It was recently announced that the forty seventh convention of the National Electric Light Association will be held at Atlantic City on May 19 to 23, inclusive. It is said that efforts will be made to equal if not surpass the success of that organization's big gathering held in the same city in May, 1922, at which time the A. E. I. had an attractive exhibit.

Succeeds Dana Pierce

Due to the removal of Dana Pierce from New York City to Chicago, where he became president of the Underwriters' Laboratories, succeeding the late W. H. Merrill, A. R. Small of Chicago has removed to New York City. Mr. Small was the vice president in charge of the laboratories at Chicago and succeeds Mr. Pierce in that office in New York City, at 109 Leonard street.

S. E. D. Meetings

The annual meeting of the Society for Electrical Development will be held at headquarters in New York City, Tuesday, February 5, at 10 a. m. This will be followed by a two day semiannual meeting of the board of directors.

The third annual dinner of the staff of the society was held at the Lafayette Hotel, New York City, on Saturday, December 22. Invited guests were the wives of members of the staff, and in addition to the general entertainment, W. L. Goodwin and F. M. Feiker, operating vice presidents, made short addresses visualizing the 1924 program of the organization.

Denver Successes

The year just closed saw an actual increase of 5,012 outlets to jobs under construction or to be started soon as a direct result of the field work of the Electrical Coöperative League of Denver, said S. W. Bishop, executive manager. Following is the classification of total outlet additions to jobs:

Conveni																							
Switch		9									. ,												517
Bracket														 							0.00		384
Ceiling										۰					0	9						e	1,179
Miscella	an	€	0) (11	8			. ,			à	0	0	0		0		0	۵	0		121
Total																							5.012

In addition, conduit was provided and provision made for 55 telephones during the year, due to League efforts. In obtaining these additions to jobs and in pushing other business building activities, 1,419 contracts were made as follows:

Architect	8					0		۵					0			0	4			0		a	0	0	0	0	0	0	0	235
Builders																											0	9		267
Owners											0						۰	۰		0										165
Realtors																														64
Newspap	e	E	5	1	RI	n	d		n	ni	18	c	e	11	la	un	11	20)10	u	8									225
Electrica																														463
Total																0		0												1.419

As a means of forecasting the future, Mr. Bishop asked a prominent member of each branch of the electrical industry for a statement in regard to the past year's business of his company. The reply of the contractor-dealer printed below is significant and should be read with interest by those in this phase of the business. J. Fischer, president of the Denver Electrical Contractors' Asso-

ciation, was the man approached, and his answer was as follows:

"In volume, business the past year has been one of the best we have had; in profit to the contractor, one of the poorest. This condition is the fault of the contractors themselves. A large number felt they had to take the work at prices offered by the general contractor; in other words, allow the general contractor to do their figuring for them. He often used one contractor to beat down the price of another.

Contractors who have figured work carefully, making itemized lists of material and using a unit price, have made a reasonable profit. There is no reason why all contractors should not do likewise if they install a proper cost system and use it. This system they may secure by becoming members of the Association of Electragists.

Every firm should make a resolution not to take work for less than labor, material, overhead and a profit.

Read It Today

The comedy drama which was presented at the annual convention of the Association has been novelized and is published exclusively by this magazine. Every electragist should read it. Turn to page 16 and read it.

Baton Rouge Electric Show Sales and Attendance Satisfactory at Preholiday Event

The electrical show staged prior to the holidays in Baton Rouge by the electric league of that city was a success in every way. Held in a large tent half a square from the business center, it was advertised by large banners across the principal streets, by banners carried on the equipment of the dealers, and by a very liberal amount of newspaper space. Nothing was overlooked in the way of effective illumination in or outside the canvas covering which housed the scene of the activity.

Sales and attendance were satisfactory. It is expected that the total sales will excede \$10,000 for the week. Weather conditions, however, were extremely unfavorable; and it is estimated that had the weather been favorable sales would have been at least fifty percent greater.

An unusual feature of the show was the giving away of coupons by the

central station, the Baton Rouge Electric Company, to purchasers of equipment, which entitled them to free current from the company's lines on the basis of one half cent per watt of the rated capacity of each appliance. For example free current was figured as follows: Irons, regardless of price, \$2.50; vacuum cleaners, \$5; lighting fixtures, floor and table lamps, \$.50 per socket; sewing machines, \$2.50; electric ironers, \$5; and refrigerating machines, \$10. Coupons in payment for electric current were, however, limited strictly to home or residential use, and were not transferable or negotiable.

The following had booths: Frigidaire Company; Wesco Supply Company; George J. Granger, Baton Rouge Electrical & Machine Works; Electrical Supply Company; Western Electric Company; W. G. Joubert; Baton Rouge Electric Company; and the Hoover Suction Sweeper Company. Dealers were assisted by Robinson Farmer, factory representative of S. Robert Schwartz & Bro., who was in attendance all of the time.

All merchandise was sold for cash, with the exception of the major appliances such as washing machines, ironers, sewing machines, etc. No marchandise was sold from any of the jobbers' booths, whose exhibits were solely for the benefit of the local dealers. The current for the show was donated by the Baton Rouge Electric Company, and the wiring was done by the local contractor-dealers.

In addition to the coupons for free current, each cash purchaser received with every dollar's cash purchase a coupon good for drawings for nightly prizes and also the grand prize which was awarded the last night of the show. The daily or nightly prizes consisted of such articles as floor and table lamps, percolators, electric grills, table stoves, etc. The grand prize was a \$350 Radiola Grand. The nightly prizes were donated by the exhibitors, while the grand prize was furnished by the electric league. The officers of the league are: J. C. Lamb, president; B. M. Sachse, vice president; George J. Granger, vice president; and W. C. Joubert, secretary-treasurer.

Providence Toast Campaign

In order to stimulate sales for all interests concerned, a toast campaign was started the middle of January in Providence, Rhode Island. Although sponsored by the New England Bakers'





Augustus D. Curtis, President, Curtis Lighting, Inc., whose vision, enthusiasm, and realization from the start of the correctness of the principle of lighting from concealed sources has resulted in making its practical applications available to all.

Bigger Things Ahead!

The completion of our new Factory and General Office marks the biggest forward step in our history! In the beginning the National X-Ray Reflector Co. was small. It grew; not suddenly or spasmodically but a steady, consistent growth which indicates a *healthy* expansion.

In time conditions warranted the establishment of another corporation to be a part of the National X-Ray Reflector Co. but to function in New York alone. Thus came into being the X-Ray Reflector Co. of N. Y., Inc., to serve the New York area as it deserved.

Still later another step forward was taken with the organizing of Luminaire Studios, Incorporated, of Chicago and New York. This move was made to assure our customers complete service in special luminaire designs.

New York

And now—the biggest step of all! These three organizations have been grouped into one larger body to be known as Curtis Lighting, Incorporated.

The name CURTIS has been chosen in tribute to the President of this consolidation, Mr. Augustus D. Curtis, whose life work has been devoted to the development of scientific illumination.

The name X-RAY REFLECTORS will continue to denote all reflector products so well known to the electrical trade everywhere. As in the past, X-RAY will signify quality and set the "standard" to be followed.

Under this new order of things, with our greatly increased facilities for manufacture, we shall continue to improve and expand our usual whole-hearted cooperation with the entire electrical trade.

"Curtis Lighting" is Lighting from Concealed Sources, Indirect Illumination, Eye Comfort — The Elimination of Glare

You'll find it Everywhere!

Curtis Lighting, Incorporated

A Grouping of
NATIONAL X-RAY REFLECTOR CO.
X-RAY REFLECTOR CO.OF NEW YORK,INC.
LUMINAIRE STUDIOS,INC.

"We Harness Light!"

31 W. 46TH STREET

Chicago

PACIFIC FINANCE BLDG Los Angeles

1

Association, electrical concerns, largely through the local league, are actively coöperating. Both A. L. Alcott, appliance store manager of the Narragansett Electric Lighting Company, and H. E. Dawson, secretary of the league, are on the organizing committee.

It is proposed to have the bakers, both wholesale and retail, and the grocers, both wholesale and retail, take an active part, as well as the hotels and restaurants, the flour distributors, the yeast companies, the hardware stores, the department stores, in addition to the electrical contractor-dealers.

The enthusiasm with which the plan is being accepted promises well for the effective building of sales.

On January 7 a general meeting was held to complete final arrangements for the campaign, and Mr. Dawson was appointed chairman of all the nonbaking interests taking an active part in it. At this meeting it was decided to issue campaign checks until February 15, which allowed purchasers a discount of \$1.05 on \$5 toasters and a discount of \$2.05 on toasters costing \$8, in option of a cash payment of 95 cents on one of these devices and paying the balance at the rate of \$1 a month with the electric light bill.

At the initial meeting in December to discuss plans for this campaign, the principal speaker was Grosvenor Dawe, secretary of the Wheat Council of the United States, formerly editor of *The Nation's Business*, and one of the organizers of the Chamber of Commerce of the United States.

He said that the reason for not having a national toast campaign in operation all over the country at the same time is that it would not be possible to supply the demand for toast making appliances that would be created. For example, with all the central stations and all the electragists all over the country pushing electric toasters at one and the same time, with all the bakers, the grocers, the hotels and the restaurants all featuring toast, with the hardware stores, the department stores and household appliance stores all featuring toasting appliance, with the domestis science teachers in the schools talking toast, the newspapers printing advertising and stories about toast, with recipes being sent to every person in the community, it is certain that the supply of electric toasters would be sold out in a few days and that the manufacturers could not possibly meet the demand. Therefore, he said, differ-

ent sections of the country would put on toast campaigns at different times in order that there may be a great enough supply of toasting appliances to go around.

Committee on Local Leagues

W. E. Robertson, vice president of the Robertson Cataract Electric Company, Buffalo, who was chairman of the conference of representatives of local electrical leagues held on Association Island last September, has announced the appointment of the following committee to develop a plan for the national organization of local electrical leagues: Charles A. Collier, Georgia Railway & Power Company, Atlanta; M. A. Curran, manager, Western Electric Company, Cincinnati; R. E. Fisher, vice president, Pacific Gas & Electric Company, San Francisco; Joseph Fowler, President, Fowler Electric Company, Memphis; J. E. North, commercial agent, Cleveland Electric Illuminating Company; L. L. Strauss, New York; Earl E. Whitehorne, commercial editor, Electrical World, New York, chairman.

The committee was authorized by the League conference to make a thorough study of existing local electrical leagues, their oganization and activities, and also of the organization plans of other national affiliations of local associations, such as the Rotary, Kiwanis, and the National Federation of Women's Clubs, and develop a plan for the national affiliation of local electrical leagues that will provide for an organized coördination and coöperation that will strengthen and promote the league movement and make available to all the experience and achievements of successful leagues.

This organization plan will be submitted for their information to all the national group associations of the elec-

trical industry and brought before the next League conference, which is to be held next September on Association Island.

Honor for A. E. I. Member

A good member of the Association of Electragists is John E. Sweeney of the Waterloo Electrical Supply Company, Waterloo, Iowa. For several years Mr. Sweeney was chairman of the committee on accounting and he was largely instrumental in bringing about the adoption of the Association's Standard Accounting System.

On January 8, at a meeting of the Greater Waterloo Association, Mr. Sweeney was elected president of that organization. His many friends in the A. E. I. will be glad to learn of this new honor.

Jobbing by Aeroplane

An aerial precedent was recently established in Columbus, Ohio, when the Hughes-Peters Electric Corporation delivered electrical merchandise a distance of forty-seven miles by aeroplane.

The Hughes-Peters Company, Columbus jobbers for the Westinghouse Company received a rush order for electrical appliances from the Knecht-Feeney Electric Company, an electragist at Mount Vernon, Ohio, and immediately sent the order to a nearby flying field by truck. It was then loaded in a plane and carried to Mount Vernon, traveling the forty-seven miles in thirty-nine minutes. The trip would have required at least two hours had the goods been sent the entire distance by fast trucks. J. B. Kuhn, a world war veteran and member of the Columbus Aero Club, piloted the plane, carrying H. J. Mc-Cullough, merchandising salesman of the Columbus Westinghouse offices, as passenger.



S. F. Swarr, General Manager, Hughes-Peters Electric Corporation, Handing Boxed Goods to H. J. McCullough of Columbus Westinghouse Office at Start of Flight

 \mathbf{f}

ıl f

g

ie

at

is

e. nnriev at ly ld ne ng nat

nd b, Cof as













ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

Convention Dates

A catalog of convention dates, as compiled by the Society for Electrical Development, for the months of February and March, is as follows:

February

-National Toy Show, Bush Terminal Sales York, N. Y. (Electrical toy manufacturers control the largest exhibits.)

4—New England Division, N. E. L. A. Merchandising Bureau, Boston, Mass.

4-8—American Institute of Electrical Engineers, Philadelphia, Pa. (Mid-winter convention.) Bellevue-Stratford Hotel. F. L. Hutchinson, 33 West Thirty Ninth Street,

New York City.
6-7—Commercial National Section, N. E.
L. A., Cleveland, Ohio.

March

Electrical Supply Jobbers' Association,

San Francisco, Cal.

3—New England Division, N. E. L. A.

Merchandising Bureau, Boston, Mass.

18—Association of Electragists, Eastern
Division Convention, Hotel Astor, New York

18-19—Illinois State, Electric and Railways Associations, Chicago, III. 27—InterAmerican Electrical Communica-tions Conference, Mexico City, Mexico.

Miss Irwin in London

Word has been received from Miss Beatrice Irwin, formerly of New York City, who made an acquaintance with the contractor-dealer group through addressing the annual convention in Buffalo in 1921. Miss Irwin writes that her color filter system was recently given a demonstration at the Illuminating Engineering Society in London, that she was spending the holidays at Brighton, the Atlantic City of Londoners, and that she will probably return to the United States next fall.

Lighting Progress Report

In many quarters it is believed that 1924 is going to be one of the biggest business years in history. The Society for Electrical Development reports tremendous activities planned to improve standards for residential, commercial, street and industrial lighting during the current year.

From the data being collected by a national survey it is found that commercial managers and others engaged in the business of selling better illumination to their customers are appreciating the tremendous possibilities of their existing markets, and are planning big sales building activities.

The S. E. D., in accordance with its business building programs, announces that it will shortly have important news to give those whose work centers on illumination, and for this purpose has

created a progress report which it will be pleased to send regularly to all who will write for it.

Trouble Fixers

The firm of Engelberg & Bear, electrical contractors, Richmond, Virginia, are more than that term ordinarily implies. They ask the public to telephone them in case of electrical troubles, and they analyze some of these troubles in the following pat manner:

If a Light Don't Light; If a Motor Don't Mote; If a Heater Don't Heat; If An Appliance Don't Apply.

In case of such troubles all the customer has to do is to call this enterprising company and the trouble fixer will be on the way in a jiffy. Such service should be highly appreciated by the

True to Life

Blake's Electric Shop was on the rocks and Blake knew it. A Good Samaritan came along and showed him the way to prosperity. Learn how success was attained by reading Do It Electrically in this issue, page 16.

Power Club Standards

The new edition of the Electric Power Club's handbook of standards for electric power apparatus was completed last month. This is the fifteenth edition and many new sections and rules have been added. It is a reference work of practical information concerning the manufacture and performance of electric power apparatus and control

Post Office Lighting

The announcement by First Assistant Postmaster General John H. Bartlett that twenty five post office inspectors in all parts of the country are to inspect post office illumination, with a view to improving it, should meet with the electragist's enthusiastic approval. should see to it that the inspector sent out by the post office department to look over the lighting of his local office orders a greatly improved installation and gives him the work.

It is said that the inspectors will study the lighting intensity of their several districts in both old and new buildings, and will report to the depart-

ment, after which all inadequate installations will be brought to the required standard established by the department to conserve the post office workers' eyes and assure a maximum of efficiency.

The standard determined upon in cooperation with the United States Public Health Service requires a minimum of eight foot candles of general illumination, to be furnished by large lighting units rather than by drop lights or other local light sources.

Apprentice Training

The Federal Board for Vocational Education has prepared a bulletin on the subject of apprenticeship which is of interest to employers. Copies of this bulletin can be had from the Superintendent of Documents, Government Printing Office, Washington, D. C.

Making Progress

As an example of electragist progressiveness an activity of B. A. Vandy of Rochester, New York, should be noted. Mr. Vandy is an electrical contractor of prominence in his native city, and he is also-a manufacturer of national renown. How come?

Well, you see it was many years ago that he took the pledge to Do It Electrically. At that time he thought only of succeeding in contracting. And succeed he did. So when his ingenious mind wandered to thoughts of entering some other branch of the business, he decided to become a manufacturer. That is how it was. Today then we find him not only a prosperous electragist but a successful manufacturer as well.

An adjustable box support for concealed work in new construction perhaps is his major product. "No measuring or sawing-four nails and a hammer, plus one minute, equals an A-1 job. And some time saved," states the advert'sed message. It saves the time of cutting boards to nail between joists, and he says has proved a labor saving in actual time of over two hours on an ordinary eight room house. Not counting switches and receptacles it takes about ten supports for fixture outlets, so it can be readily estimated that with the cost of the supports deducted from the time saved, the contractor has saved money by using such fittings, as well as giving the customer a better job.

Then there are other handy devices which Mr. Vandy makes. An All in One Cover saves carrying a variety of covers in stock. It is of sheet metal is

d. or od

al

ly

us

er.

ist ll.

nsm-

he ne

ts.

ng

an

nt-

ces

ith om red

in

etal

10 different brands of fuses may have the Underwriters Label but that does not mean that they are equally good-any more than 10 graduates with Yale diplomas have equal knowledge: There's lots of difference even among good fuses: That's why NOARK FUSES cost a little more

NOARK fuses blow on the dot

THE JOHNS-PRATT COMPANY, 160 Huyshope Av., Hartford, Conn.
Division of Colt's Patent Fire Arms Mfg. Company

BOSTON (9) 161 Summer St. CHICAGO 35 So. Desplaines St. CLEVELAND 1365 Ontario St. NEW YORK 41 East 42nd St.

PHILADELPHIA 22 So.15th St. PITTSBURGH

ST. LOUIS 314 N. Broadway SAN FRANCISCO 74 New Montgomery St.

EXPORT DEPARTMENT, 30 Church Street, New York, N. Y., U.S. A.

Johns-Pratt

J-P

has the ability and capacity to serve you in NINE ways



NOARK Fuses



NOARK Fuse Clips and



NOARK Service and Sub-



ALL-SAFE Switches



NOARK Universal Service Entrance Switches



ailway and mine mater-



molding service—con-



VULCABESTON Packing
-sheet, rope, braided



J-P molded radio partsfrom stock



6820-8

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

for four inch round conduit boxes and has eleven knockouts which are so arranged as to enable the worker to carry one type of cover in stock, which will not only do the work of a blank cover but can also be used as a switch or receptacle mounting cover, as well as a knockout for use with battery bushing for drop cords, etc. Just knock out the various knockouts for whatever purpose it is desired to use the cover.

A Circular Box Support for concealed work in old houses is a stamped metal ring which holds the outlet box firmly in place with the minimum trouble in cutting old plaster as it helps cover up the cut in the plaster. It gives a solid and secure support for a fixture of any size or weight, and meets with the Underwriters' demands for an outlet box being flush with the plaster line.

A third development is a Brush Brass Cover Ring or Sub Base, used as a finisher to cover screw heads in the Circular Box support for old houses when four inch fittings are used. It is also designed to cover the ring in case the canopy or receptacle base that is being installed is too small.

Now don't you think that these are accomplishments of which any electragists may well be proud? Mr. Vandy reports that a wide demand is being created for these devices of his, and it is significant that he is placing his advertising message in these pages.

Young Sails for Europe

Owen D. Young, chairman of the board of directors of the General Electric Company, and recently selected as a member from the United States of the reparations committee to help balance the German budget and stabilize the mark, sailed for Europe from New York, December 29.

Mr. Young started life on a farm at Van Hornesville, N. Y. He managed to secure an education at St. Lawrence University and later studied law in Boston, where he rose rapidly in this profession. In 1913 he became vice president and general counsel of the General Electric Company, and in 1922 was appointed chairman of the board, when he was but 48 years of age. He is also chairman of the board of directors of the Radio Corporation of America. Mr. Young's case is but another example of a boy who began life on a farm and who, with no advantages save what hard work and natural ability made for him, won his way to international reputation.

Storage Battery Book

"Elements of Storage Batteries" is the name of a new book issued by the McGraw-Hill Book Company, New York City, edited by C. J. Jansky and H. P. Wood, both of the University of Wisconsin. A clear and practical explanation of the principles, operation, maintenance and repair of storage batteries for the nontechnical man is the aim throughout, and the reader is told something of the care, maintenance and repair of such batteries to insure the most efficient service.

There are two hundred and thirty six pages and eleven chapters, and an index is given in the back of the book. In order to help the reader in an understanding of every phase of the subjects covered, at the end of each chapter a recapitulation of facts is given and a list of questions are asked. Diagrams, tables and halftone illustrations help in a large measure to interpret the text. This book should be of value to all electragists.

Never Give Up

The story written from the convention play points a moral for struggling contractor-dealers to follow. Every electragist should read it and learn to help whers to succeed. Look for the story on page 16.

Joint Committee Meets

The first meeting of the Joint Committee for Business Development since the election of Milan R. Bump as chairman last September, was held at the headquarters of the National Electric Light Association in New York City on Friday, January 11. This was in the nature of a special meeting to which were invited representatives of the national group associations of the electrical industry and a few individuals. There were present: Walter H. Johnson and Norman T. Wilcox, representing the National Electric Light Association; Frank W. Smith, Association of Edison Illuminating Companies; E. M. Herr, Electrical Manufacturers' Club; S. N. Nicholson and D. R. Bullen, Associated Manufacturers of Electrical Supplies; Herman Plaut and Albert Wahle, National Council Lighting Fixture Manufacturers; G. E. Cullinan, Electrical Supply Jobbers' Association; W. H. Morton, Association of Electragists-International; E. B. Gillender and Mar-

shall T. Gleason, Illuminating Glassware Guild; Fred R. Smith, National Association of Lighting Equipment Dealers; P. R. Labelle, Canadian Electrical Association; Charles L. Edgar, Society for Electrical Development; Arthur Williams, New York Edison Company; R. H. Tillman, Consolidated Gas, Electric Light & Power Company, Baltimore; A. K. Baylor, General Electric Company; F. A. Ketcham, Western Electric Company; Earl E. Whitehorne, Electrical World, and Milan R. Bump, Henry L. Doherty & Company, chairman.

The meeting was devoted to the discussion of the place of the Joint Committee in the industry and the possibilities for its reorganization as a policy committee composed of the officials of the organized group associations to function as a common meeting place for the consideration of broad questions of policy affecting the various branches of the industry. It was decided to appoint a plan and scope committee to make a thorough study of the situation and report to a later meeting. The personnel of this plan and scope committee will be announced shortly.

New Psalm of Life

The St. Louis Rotary Club's Pepper Box shakes out the following seasoning from the pen of Louis Luth:

Tell me not in smiling numbers Selling costs are what they seem, And a man who cuts for orders Gets the lion's share of cream.

If you strive to build a business, Do not be a human sieve, Letting leak your needed profit, Trusting luck will let you live.

Lives of "dead ones" all remind us
What it means to sell on guess—
Their departing makes us keener
To sell right and not sell less.

Get your costs as low as may be, Let your profit be what's fair; Then will men know where to find you And will help to keep you there.

For no trade can long be loyal To a man who's "all regrets"— Can't deliver—who's just living On the interest of his debts.

Live and laugh and work and prosper, Know your costs and sell at gain; And continue doing business When price "busters" split in twain.

Comprehensive Catalog

Dossert & Co., 242 West 41st St., New York, has just received from the press the twentieth year catalog of Dossert Solderless Connectors for stranded and solid wires, rods and tubing. It marks

In the Better Kitchens



P&S Receptacles for Kitchen Units



ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

sert and rks

4

al nt

ar, ıt; on ed ıy, ecrn ıe, p, ir-

ismilcy of to ce

us lemhe ng. pe

oer

Printed Forms

for the use of

Contractor-Dealers

Time Savers—and time is money. These useful forms are printed in large quantities and sold in small lots at the quantity prices; so they also are Money Savers.

Universal Estimate Sheets Universal Proposal Blanks Labor Time Cards Requisitions for Material Returned Material Sheets Job Envelopes

While these printed forms were originally prepared for Association members, and are sold to them practically at cost, they also are supplied to non members at a slight advance over members' prices.

Write Today for Prices

Address:

Association of Electragists

15 West 37th Street New York City



Now One Hundred Thirty-Seven Fifty

Galvanized Tub

\$13750

Denver and West \$145.00 In Canada . . . \$172.50

\$15500

Denverand West \$162.50 In Canada . . . \$187.50 This new low price (\$137.50) was made effective on the ROTAREX Washer January 1, 1924. With that announcement a low price level was established for high grade washers and the greatest washer value, no matter at what price, is now to be found in the ROTAREX.

There may be washers for less money, but they hold no comparison to the ROTAREX. There may be washers that cost more money but in quality, service and distinctive features the ROTAREX stands at the top of the list.

Couple with the sturdy quality, distinctive features and low price of the ROTAREX our definite plan for dealer merchandising, and the combination becomes unequaled.

And remember—this is the lowest priced high grade washer on the market today.

Will you be one to secure the advantages accruing to ROTAREX dealers? A request by letter will bring you the details of how we can help you build a profitable business.

"There is an advantage in handling the APEX-ROTAREX line."

THE APEX ELECTRICAL DISTRIBUTING COMPANY 1081 EAST 152nd STREET, CLEVELAND, OHIO

Factories at Cleveland, O. and Toronto, Can.



ROTAREX HOME DOUBLE ROLL IRONER



ROTAREX KOOK-RITE

a very substantial enlargement over previous catalogs in the matter of data and information, brought up to the minute.

The book further takes up the subject of putting together a typical Dossert joint, illustrating it completely. Another innovation is the presentation, on a single page, twelve of the most frequently encountered types of connections and how they can be made with Dossert joints. Illustrating the proper Dossert to fit the joint in question. It is a book of sixty-four pages.

News Notes Concerning Electrical Contractor-Dealers

Business Changes, Store Improvements and New Establishments Opened

Calvin L. Beardsley, in the radio and electrical supply business at 217 Eighth Street, Rock Island, Illinois, has opened a branch store at 114 West Second Street, Davenport, Iowa.

The Paul Anderson Electric Company is locating at 518 South Michigan Street, South Bend, Indiana. Formerly at 410 South Michigan Street, South Bend.

Carrington & Riley will conduct an electrical appliance business at 7 East Fiftieth Street, Chicago, Illinois. Incorporated capital, \$10,000. Incorporators: M. Carrington and others.

Sewell Appliance Shop announces its opening at 8716 Twelfth Street, Detroit, Michigan.

Cascade Electric Company has established headquarters at Seattle, Washington. Incorporated capital, \$10,000. Incorporators: J. N. Hamill, 2029 East Newton Street, Seattle, and others.

Peel Radio Corporation will conduct a radio and electrical supply business at Davenport, Iowa. Incorporated capital, \$10,000. Incorporators: T. E. Harvey and others.

Auto Mechanical Products Company announces its opening at 150 North Wood Street, Chicago, Illinois, where a complete line of electrical and radio supplies will be carried. Incorporated capital, \$20,000. Incorporators: H. J. Vodicka and others. Correspondent: R. L. McVean, 10 South La Salle Street, Chicago.

Apex Electrical Distributing Company is locating at 410 Sixth Street, Sioux City, Iowa. Formerly at 408 Sixth Street.

Rogers Electric Company, in the electrical supply business at Eleventh and John Streets, Anderson, Indiana, is adding an extensive line of radio supplies.

Armatur Electric Works has opened an electrical supply store at Seattle, Washington. Incorporators: William I. Perry, 2515 Fifth Street, Seattle, and others.

Radio Material Supply Company has established headquarters at 138 North La Salle Street, Chicago, Illinois. Incorporated capital, \$20,000. Incorporators: Robert Fogelson and others. Correspondent: Harry G. Wexler, 110 South Dearborn Street, Chicago.

Findley Electric Company, in the electrical supply business at 216 South Fifth Street, Minneapolis, Minnesota, has opened branch stores at 2004 Hennepin Avenue and at 2246 Johnson Street, N. E., Minneapolis.

J. M. Gaunt & Son are having a new building erected at Reynolds, Illinois, which they will occupy as soon as completed around March 1. Electrical supplies will be carried.

The Marine Electric Company has established headquarters at 104 East Market Street, Louisville, Kentucky. Formerly located at 323 West Market Street

Mullins & Shugers have started work on a two story store building to cost \$25,000 at 521 East Ninth Street, Los Angeles, California. Will occupy when completed about April 1.

W. L. Cloutier Company announces its opening at 10832 East Jefferson Avenue, Detroit, Michigan, where a full line of electrical supplies will be handled.

The Maytag Electrical Appliance Company has opened a new store at the Phoenix Building, Rockford, Illinois.

Electric Appliance Company will conduct a radio and electrical supply business at 619 First Avenue, N., Fargo, North Dakota.

Thomas Electric Company has established headquarters at 159 South Beech Street, Casper, Wyoming.

Lloyd Bros. Electric Appliance Company, an old established concern, is engaged in the electrical contracting and appliance business at Maplewood, Missouri. Incorporated capital, \$30,000.

Superior Electric Company is locating at 1827 Texas Avenue, Shreveport, Louisiana.. Formerly at 1827 Texas Avenue.

Acorn Electric Company will conduct an electrical supply business at 500 Oregonian Building, Portland, Oregon. Incorporators: D. Price and others.

Indiana Electric Company is reported to have moved to larger quarters at 1202 Meridian Street, Anderson, Indiana, where an electrical supply business will be conducted. Formerly located at 16 West Eleventh Street, Anderson.

Applicande Distributing Company, of which E. F. Agnew and W. Wilson are proprietors, has opened a new store at 249 East Seventh Street, Long Beach, California, where an extensive line of electrical appliances will be carried.

Young, Lorish and Randall, Incorporated, are engaged in the radio supply business at 800 South Michigan Boulevard, Chicago, Illinois. Incorporated capital, \$50,000. Incorporators: A. R. Galos, Title Guarantee and Trust Building, Chicago, and others.

Even Heat Electrical Appliance Company has established headquarters at Portland, Oregon. Incorporated capital, \$50,000. Incorporators: Maurice W. Seitz, North West Bank Building, Portland, and others.

Radio Vacuum Cleaner Company announces its opening at St. Charles, Illinois. Incorporated capital, \$50,000. Incorporators: B. C. Delancey and others. Correspondent: Harry G. Hempstead, 22 East Main Street, St. Charles.

The Palmer Shop will conduct an electrical fixture and contracting business at 1036A Broadway, San Francisco, California.

Household Electrical Service Company is locating at 12209 Twelfth Street, Detroit, Michigan, where an extensive line of electrical supplies will be handled.

Lambert Grisham Electrical Company will conduct an electrical supply business at Owensboro, Kentucky. Successor to Hitt Electrical Company.

The Brotherston Electric Company, Ltd., of Calgary, Alberta, Canada, have the contract for installing an electric lighting system in the Crowfoot School of the Blackfoot Indian Reservation in that province, for the Dominion Government. n

e

r

ın

aid

nat

ud-

mli-

nd

G.

an

an-

mfth

an lies

omply

uc-

ny,

ave tric

lool

in

OV-

The Brains Behind This Great Hotel Recognized the Superiority of

In selecting materials used in the construction of this modern new Los Angeles hotel, quality, efficiency and economy of operation were the chief items of consideration. To maintain this high standard throughout it was only natural to equip this hotel completely with "Union" Renewable Fuses and "Chicago" Mica-Top Fuse Plugs.

When "Union" Fuses and "Chicago" Fuse Plugs are adopted for such a modern structure, whose owners had at their command some of the most able electrical engineers, doesn't it prove to you that these fuses must have great advantages over other makes?

Our big catalog tells why our fuses are preferred by men who know. May we send you a



New Biltmore Hotel, Los Angeles Golden State Electric Co., Los Angeles Electrical Contractors

CHICAGO FUSE MFG. CO.

Manufacturers also of Switch and Outlet Boxes, Cut-Out Bases, Fuse Wire and Automobile Fuses.

CHICAGO NEW YORK

Concerning a Product and a Trade Mark-

WIRING



DEVICES

The idea back of the "DIAMOND H" Trade Mark—
THOROUGHNESS — QUALITY — SERVICE

Thoroughness in design, materials and construction can alone produce quality. Nothing but quality can give service. Nothing but a service-giving capacity can create a permanent and growing business.

In the "Diamond H" trade mark this company has aimed to symbolize the utmost of value to the electrical contractor.

THE HART MANUFACTURING COMPANY

HARTFORD, CONN.

NEW YORK CHICAGO BOSTON LOS ANGELES DETROIT CLEVELAND

DENVER LOUISVILLE TORONTO, CANADA



New Vacuum Cleaner

The new type vacuum cleaner just placed upon the market by the Apex Electrical Distributing Company of Cleveland has many novel features. Simple in construction, it weighs seven and one half pounds with all attachments, and servicing therefore is re-



duced to a minimum with the maximum ease of operation.

It has no wheels, springs or adjustments and can be changed quickly from a cleaner of carpets or rugs to a cleaner of draperies, upholstery or any other dust collecting object or surface. The bag, which is concealed and protected, can be quickly emptied. The motor is air cooled to an unusually effective degree, it is claimed.

Equipped with automatically fed bronze bearings of special design and composition the Rotarex, as it is called, will run an indefinite period without reoiling. The body is of heavy sheet aluminum.

The terminals, which are oftentimes a source of trouble, are protected by vulcanized rubber of a special shape fitted to the cord in such a way that they are relieved from strain and breaking caused by bending the cord. This applies to the terminals on the cleaner as well as on the plug.

This unique cleaner is shown complete in the accompanying illustration.

New Attachment Plug



The A-1 Plug has been designed by the Connecticut Electric Manufacturing Company of Bridgeport, for use with high grade appliances. Electrical appliances have im-

proved so rapidly in design and quality that it was felt an attachment plug of this kind would meet a wide demand.

Being made of bakelite with nickel trimmings the new A-1 Plug is handsomely and sturdily constructed; its cap does not crumble nor do its prongs readily break loose. It comes packed in an attractive three color display carton in quantity lots.

Safety Light Unit

To offset rising costs of relamping and cleaning large installations the Western Electric Company, New York City, offers a new unit. It is called the 99 Safety Unit and is a direct lighting



totally enclosed type. Moving the knurled nut in one direction expands the concentric rings to their fullest so the bowl can be inserted. Moving the same nut in the opposite direction con-

tracts the ring to hold the neck of the globe securely. A turn of the nut locks the rings securely in place so the bowl cannot fall out. A concentric ring attachment of this kind automatically centers the globe and assures even pressure which prevents cracking of the neck.

There is but one screw in the equipment. It cannot come out or be lost. The smooth surfaces with only this one screw projecting facilitate cleaning. The holder itself is finished in a rich dark statuary bronze. Room has been provided for wiring. The canopy has one knockout for canopy switch installation. The holder forms a dust proof housing. Finger grips facilitate moving the knurled nut when servicing. The globe is of cased glass, assuring maximum strength and minimum absorption of light. The large radiating surface carries off heat.

New Luminous Switch

Tumbler switches are now supplied with luminous tips by the Bryant Electric Company of Bridgeport, it is an-



nounced, after experimentation which led up to the installation of radium coated glass rods inside the switch handles, which are of bakelite.

Because of the built in handles these switches are attractive not only to the user, but also to the architect. The luminous material being made with genuine radium, the switch handle is permanently luminous and will glow with the same brilliancy. The switch can be seen from any angle, and is considered by the manufacturer as



SCHWARZE

MONITOR

D. C. and A. C.
Vibrating
Cyclone Bell

WEATHER PROOF

Type No. 62 For Direct Current
Type No. 72 For Alternating Current
FURNISHED WITH 8-INCH GONG ONLY

For operation on 250 volts or less Alternating and Direct Current.

Has all terminals and current-carrying parts heavily insulated from frame and securely inclosed in metal case. For multiple operation only.

Always Give Voltage of Circuit When Ordering.

WRITE FOR PRICES AND BULLETIN

Manufactured by

SCHWARZE ELECTRIC CO.

ADRIAN,

MICHIGAN

Knu Canopy Insulator



Approved by Underwriters' Laboratories

Can be applied to canopy without the use of tools in rolls of 10 feet.

ARTHUR F. STANLEY

SELLING AGENT

West & Hubert Sts.

New York

Telephone 5200 Canal

A NEW RULING

The New Code Ruling

Reads

"LOOM MUST BE SECURED TO BOX OR PLATE"



No. 567

Stud

←Note the Clamp

No. 568 Combination

"T & B"
CLAMP LOOM BOXES
CONFORM
WITH THIS REQUIREMENT

You will find this Box EASY TO WORK on OLD or NEW jobs.

Sample Gladly Furnished upon Request

Order by the "T & B" Number from your Jobber

THOMAS & BETTS COMPANY

63 Vesey St., New York City 10 High St., Boston, Mass.

much of an improvement over the ordinary socalled luminous handle as the luminous handle was over the old style of plain handle.

New G-E Equipment

A new single throw starting switch, the CR-1038-A1, has been put on the market by the General Electric Company for use with small alternating current motors. This switch is of the three pole type, designed for quick make and break, and is operated by an up and down movement of the handle. The unit is compact and of substantial construction to permit of wall or pedestal mounting.

A new enclosed automatic starter, the CR-7056-D1, of the primary resistance type, also has been developed for starting polyphase squirrel cage induction motors under light load. The resistance of this starter is proportioned to give an inrush current of three and a half times the normal full load motor current, permitting the motors to develop at least 50 percent, full load torque in starting.

Improved Kitchen Unit

A new enclosed dustproof kitchen lighting fixture, designated as type X. C. K., has now been added to the



line of the Mitchell Vance Co., Inc., New York City.

This new unit has several claims, for in addition to a quality standard both as to efficiency and beauty and design, it embodies the features which a careful study of the requirements of the industry has shown to be essential.

The unit was designed for the use of 150 watt lamps to provide adequate

illumination for even large kitchens, though in small rooms it has an excellent efficiency when lighted with 100 watts. It is supplied either with or without a self contained pull chain switch, as required.

Novel Convenience Outlet

To provide a convenience outlet in kitchens where the only electrical connection is through a single ceiling fixture, the F. W. Wakefield Brass Company of Vermilion, Ohio, has developed the simple combination Red Spot kitchen unit pictured herewith. The con-



venience outlet consists of a short channel or trough leading from the fixture canopy close to the ceiling and carrying an ordinary drop cord connected in accordance with Underwriters' rules. The trough is of proper length to give clearance on glassware up to 14 inches diameter, and due to the structure and method of hanging this particular type of Red Spot fixture, the attachment is very rugged and will withstand hard usage.

All Purpose Fixture

Columbalite lighting fixtures manufactured by the John Harcock Electrical Company of Denver are the product of tests and experiments to produce a practical lighting fixture covering the entire commercial lighting field. By incorporating unique modern features these units are said to eliminate shadows and diffuse light over a large area with intensity and without glare. They are designed to be dust and bug proof and their reflectors are supposed to be unaffected by heat from the lamp.

By securing unusual patent rights the construction of this lighting unit is possible. An opaque reflector of small height projects around an enclosed glass globe and is fluted so as to give a multiplicity of rays and thereby a dif-

fusion of light. With that position of the globe, the reflector allows enough light to go to the ceiling to dispel shadows, and dust has a tendency to pass through and not settle on the reflecting portion of the globe or reflector. The clear corrugated portion allows all the light to come out of the globe, which is of fused white enamel, eliminating glare from the lamp, and the rays are broken up to give the best possible diffusion.

Since the reflector is made of steel, different ornamentations of varying weight are made to go with these units and make them harmonize with their surroundings in any installation. They are adapted to the home, office, store, or public building.

Issues New Catalog

The Kardon Products Company of New York City has just issued a new catalog and guide book featuring the more prominent hookups which work in conjunction with the other units of the company. Copies are free to those in the trade applying for them direct to the main office.

New Type Condenser

A new type variable condenser has been brought out by the Crosley Mfg. Co., Cincinnati, Ohio. Operating on an entirely different principle from the



conventional condenser, it is sold at a considerable smaller price. Model D sells for \$2.25 and Model B for \$1.75.

Instead of the customary stator and rotor, the condenser consists of two plates which open and close much like a book, the closing being accomplished by a cam operated by the knob on the panel and the opening being by springs which draw the upper plate against the cam.

It is said that the stray electric field is considerable less in this type condenser consequently there is less hand capacity while tuning. The maximum capacity is rated .0005 and minimum .00002 mfd.



Alphaduct Company's

Trade Mark

on every carton containing ALPHADUCT or ticket attached to a coil of large size ALPHADUCT—stands for QUALITY of construction, material and workmanship.

ALPHADUCT COMPANY

136 CATOR AVENUE,

JERSEY CITY, NEW JERSEY

RAVEN CORE—A Rubber Covered Wire of Distinction!

Made by a house of standing.

Specified by all the leading architects.

Used by the Contractors who do the better grade of work.

Can you afford to overlook it?

NEW YORK INSULATED WIRE CO.

Main Office: NEW YORK

Factory: WALLINGFORD, CONN.

DENVER

Agencies and Branches:
LOS ANGELES CHIC

CHICAGO

BOSTON

Combination Binding Post

The Globe Phone Mfg. Co., Reading, Mass., has brought out a new combination jack binding post. In appearance it is somewhat like a miniature drill chuck with a polished nickel finish.

It is universal in design and will take all sizes of phone cord tips and direct wire connections sizes from No. 10 to No. 14, also the fork type and spade tip terminals. Connections are made by



plugging straight in, similar to a telephone jack, a slight twist of the knurled cap tightening the connection.

With this post it is impossible to short circuit between posts and the turning of the post has no effect on the position of the cord. The posts are mounted by means of a nut and are equipped with a lug washer for soldering wire connections. The price is 25 cents per pair.

Condensed Notes of Interest to the Trade

With an addition to its factory and the installation of double tracking equipment, the F. W. Wakefield Brass Company of Vermilion, Ohio, is in a position to greatly increase production.

A. E. Tregenza has resigned as general manager of the Economy Fuse and Manufacturing Company of Chicago, which position he had held for eleven years.

As advertised to the trade, a new general catalog known as issue R has been put out by the Hart & Hegeman Manufacturing Company of Hartford and is now ready for distribution.

Killark Electric Manufacturing Company of St. Louis is now represented in New York City and New York State by George C. Knott, 67 Park Place, New York City.

Orders received by the General Electric Company for the year ending December 31, 1923, amounted to \$304,199,746, compared to a total of \$242,739,527 for the year 1922, or a gain of 25 percent. For the fourth quarter of 1923 orders totalled \$74,452,442, as compared with a total of \$66,568,333

for the corresponding quarter in the year 1922, or a gain of 12 percent.

J. W. McIver has been appointed advertising and publicity manager of the Edison Lamp Works of the General Electric Company, at Harrison, New Jersey, to succeed T. J. McManis, newly made assistant to the manager of the publicity department of the entire company.

New and revised data sheets on Red Spot lighting specialties are being issued by the F. W. Wakefield Brass Company of Vermilion, Ohio.

W. H. Colman has been appointed merchandise manager of the Chicago commercial district of the General Electric Company. Other appointments are as follows: Herman W. Schroeder, district auditor of the southwestern district, following the recent creation of this district; C. E. Wilson, managing engineer of the conduit and wire division, Bridgeport works; and Nicholas M. DuChemin has assumed the duties of general superintendent of the West Lynn plant, following the death of William J. Lloyd last fall.

For 1923 the Western Electric Company sales billed were approximately \$250,000,000, as compared with \$211,000,000 for 1922, the largest previous year. Orders on hand at the end of the year were about \$95,000,000—\$33,000,000 in excess of those on hand at the end of 1922. The prospect for 1924 is that a still larger business will be done.

The Beardslee Chandelier Manufacturing Company of Chicago has issued a booklet free to the trade, entitled Commercial Lighting. In it are described, illustrated and priced a variety of units suitable for lighting stores, offices, schools, churches, hotels and public buildings.

Betts & Betts Corporation, New York City, has discontinued its regular sales force, retaining but two of the oldest salesmen, S. B. Johnson, connected with the New York office, and V. H. Walker, in charge of the Philadelphia office covering eastern states. Manufacturers' representatives in place of salesmen have been appointed.

A Valentine Week contest is being conducted by the Benjamin Electric Manufacturing Company of Chicago involving an issuance of fourteen prizes totaling \$350.

F. J. Walker, formerly with the Cutler-Hammer Manufacturing Company, Milwaukee, and the Economy Fuse and Manufacturing Company, Chicago, is now with the Connecticut Telephone and Electric Company, Meridan, Conn.

The Curtis Building, a six story office and factory building, has just been completed at 1119 West Jackson Boulevard, Chicago, and will now accommodate the central offices and manufacturing plant of the National X Ray Reflector Company, the X Ray Reflector Company of New York, Inc., and Luminaire Studios, Inc., of New York and Chicago, reorganized under the new title, Curtis Lighting, Incorporated.

WHO carries your Liability Insurance? The National saves you money on this.



The Latest Device to Make for Radio Utility in the Home is a Six Tube Murad Radio Frequency Receiver Mounted in Tea Table Manner. The Entire Set is Self Contained, Including Loop and Loud Speaker



Insulated wire and cable for every transmission purposenot made to meet a price, but with the idea of rendering maximum service to the purchaser and of reflecting maximum credit to the contractor who uses it.

Safety Insulated Wire and Cable Co.

114 Liberty Street YORK NEW

PARANITE

RUBBER COVERED WIRES AND CABLES The Standard for THIRTY-THREE Years



For all purposes. Inside, Outside, Aerial, Underground and Submarine Use.

IF IT'S

INDIANA RUBBER & INSULATED WIRE CO. JONESBORO, INDIANA

New York Representatives:

The Thomas & Betts Co., 63 Vesey St., New York City Chicago Branch:

Indiana Rubber & Insulated Wire Co. 210 Marquette Bldg., Chicago.

STEEL CITY **PRODUCTS**





"HE installations you make—the service you render—and the profits you receive are dependent upon the quality and economy of the materials which you

> HEN STEEL CITY conduit fit-

tings are used in your installations, you are giving

your customers the utmost

in quality and at the same

time decreasing labor costs to the minimum which aids very materially in causing the job to show a profit for



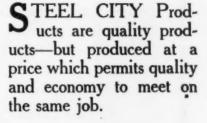












Complete stocks are carried by your jobber or can be secured through our nearest representative.



Write today for your copy of our new Catalog No. 34.





you.

Association of Electragists

PRESIDENT, James R. Strong, 526 W. 34th Street, New York City. SECRETARY AND TREASURER, Laurence W. Davis, 15 West 37th Street, New York City.

GENERAL COUNSEL, Franz Neilson, New York City.

Executive Committeemen GREAT LAKES DIVISION

L. G. Ross, 1305 Tower Avenue, Superior, Wisconsin

CENTRAL DIVISION

EASTERN DIVISION W. Creighton Peet, 70 East 45th Street, New York City

SOUTHERN DIVISION

J. A. Fowler, 118 Monroe Avenue, Memphis, Tenn.

EASTERN CANADIAN DIVISION

R. A. L. Gray, 85 York Street, Toronto, Ont.

OPEN SHOP SECTION

Joseph G. Crosby, 140 N. 11th St., Philadelphia.

A. Penn Denton, 17th and Oak Streets, Kansas City, Mo. WESTERN CANADIAN DIVISION

C. C. Carter, 739 Hastings Street W., Vancouver, B. C.

C. L. Chamblin, 687 Mission Street, San Francisco, Calif. MOUNTAIN DIVISION

PACIFIC DIVISION

E. C. Headrick, 89 Broadway, Denver, Colorade

AT LARGE James R. Strong, 526 W. 34th Street, New York City.

UNION SHOP SECTION L. K. Comstock, 21 East 40th Street, New York City

Past Presidents of the National Electrical Contractors' Association

Charles L. Eidlitz____1901-1903 Ernest McCleary ____ 1903-1905 James R. Strong ____ 1905-1908

Gerry M. Sanborn___1908-1910 *Marshall L. Barnes__1910-1912 Ernest Freeman____1912-1914
*Deceased.

John R. Galloway.....1914-1916 Robley S. Stearnes....1916-1918 W. Creighton Peet....1918-1920

COMMITTEE CHAIRMEN

ARCHITECTS AND ENGINEERS Clyde L. Chamblin 687 Mission St., San Francisco, Calif.

CODE A. Penn Denton 17th and Oak Sts., Kansas City, Mo.

CONVENTIONS AND MEETINGS James R. Strong 526 W. 34th St., New York City

COST DATA Arthur L. Abbott 3649 Bell Avenue, St. Louis, Mo.

CREDIT AND ACCOUNTING C. C. Carter 739 Hastings St. W., Vancouver, B. C.

ELECTRAGISTS' DATA BOOK J. A. Fowler 118 Monroe Avenue, Memphis, Tenn.

INTERNATIONAL RELATIONS R. A. L. Gray 85 York Street, Toronto, Can.

LEGISLATION E. C. Headrick Denver, Colo. 89 Broadway,

LIABILITY INSURANCE J. A. Fowler 10 S. Second Street, Memphis, Tenn.

MEMBERSHIP James R. Strong

PUBLICATION Joseph G. Crosby, 140 N. 11th St., Philadelphia

STANDARDIZATION L. G. Ross 1305 Tower Ave., Superior, Wis.

(Covering Manufacturers, Central Stations, Jobbers and Merchandising) W. Creighton Peet 70 East 45th Street, New York City

TRADE POLICY

U. S. CHAMBER OF COMMERCE L. K. Comstock 526 W. 34th Street, New York City. 21 East 40th Street, New York City

NEXT ANNUAL CONVENTION, WEST BADEN SPRINGS, INDIANA, WEEK OF SEPTEMBER 29, 1924

FOR EMPLOYMENT AND BUSINESS OPPORTUNITIES receeeee

POSITION WANTED

Technical graduate, age 30, with over four years' experience estimating and superintending for electrical contractor doing large volume of business in large city in Middle West, desires to make a change. At present employed. Address: Box F, clo THE ELECTRAGIST, 15 West 37th St., N. Y. City.

LIGHTING FIXTURE SALESMAN WANTED

Young man to solicit and sell lighting fixtures in city of 200,000 population. Have attractive showrooms. State age, experience and references. Address:

JACOBE BROS. ELECTRIC CO., 1014 Prairie Avenue, Houston, Texas.

READERS!

Look carefully. The Market Place is often able to supply you with a real bargain-or with a good position.

RATES:

Situations Wanted, \$1.00 per inch, each insertion.

Help Wanted, Business Proposals and For Sale, display type, \$2.50 per inch, each insertion.

WANTED.-Retail lighting fixture salesman with knowledge and ability to handle special design large building installations. Address: Sanborn Electric Co., 309 North Illinois Street, Indianapolis, Indiana.

WANTED.-Retail salesman to sell commercial fixtures to stores and industrial plants. Some knowledge of illuminating engineering desirable. Address: Sanborn Electric Co., 309 North Illinois Street, Indianapolis, Indiana.

Slow Moving Electrical or Radio Stocks Surplus

Converted into Quick—Immediats—Cash

No stocks too large or small.

Write—Wire—Phone or Call.

State in full detail, the items, quantity of each item and lowest prices acceptable.

THE R-C OUTLET

Executive Offices: 303 Fourth Ave., N. Y. City
Phone: Ashland 1109; Gramercy 1585.

WANTED

Sales Department and Promotion Manager for Schenectady, New York. To be responsible not only for the sale of merchandise, but for the sale of service and the company's product. Population served, 100,000; gas customers, 22,000; electric customers, 26,000. If interested, please correspond with the undersigned:

Victor Starzenski, Resident Manager Adirondack Power & Light Company, Schenectady, New York.

Proposition Wanted in Los Angeles, California or District

Electrical contracting engineer operating a fairly large business in East on industrial lighting and power work, substations. etc., is looking for a real live proposition with a contractor, with a view of investing money in the business if satisfactory. Strictest investigation will be made and invited. State full continuous of turnovar class of business. particulars of turnover class of busines and prospects. Strictest confidence. Address: Box E, c|o The Electragist, 15 West 37th Street, New York City.



Gravity Drop



Needle Drop



Target Drop

Our Annunciators have stood the test of over 30 years of exacting service. We also manufacture Hospital, Lamp, Burglar Alarm, and Fire Alarm Types. They are designed to operate on battery or transformer current, and can be supplied with wood or metal cases.

Our Engineering Department is prepared to design any Special Annunciator to comply with your requirements.

MAIN OFFICE: 371 Broadway, New York

FACTORY: 83-89 Clifton Place, Brooklyn, N. Y.





Start the New Year Right

KNOW WHERE YOU STAND

By Adopting the New Standard Accounting System

This simple and accurate accounting system is endorsed by practically all of the branches of the electrical industry. It conforms with the accounting systems adopted by other electrical organizations; it is flexible and economical; it is easy to operate, accurate and quick working.

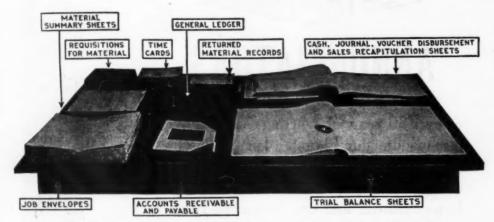
For Contractors—For Dealers For Contractor-Dealers

Adopted and Issued by the

Association of Electragists

Sold to Members or Non Members

You should always be able to answer these three questions accurately and instantly:



Here is the complete working set, just as it looks, and the whole outfit when spread out for exhibition no more than covers the top of a table.

- (1) Do you know at the end of each month your net profit?
- (2) Do you know that your annual inventory is accurate?
- (3) Can you quickly and accurately make your income tax report from your books?

FULL INFORMATION SENT UPON REQUEST BY THE

ASSOCIATION OF ELECTRAGISTS—INTERNATIONAL 15 West 37th Street, New York City

The New Business Record is recommended to contractor-dealers who do their own bookkeeping.

MERCURY TIME SWITCHES

LEAD BY COMPARISON

Not from the standpoint of price alone have MER-CURY TIME SWITCHES been selected by many of the leading users of large sign boards as standard equipment, but because they lead by comparison for the small amount of servicing and the durability, quality and workmanship has placed them at the top.

Mercury Time switches function perfectly in all weather and climates, the utter simplicity of design and the liquid mercury contact eliminates all friction, arcing and corrosion.

The switch is not geared to the clock movement, making all parts quickly accessible.

And the new price of Mercury makes it possible for the dealer to find a big market.

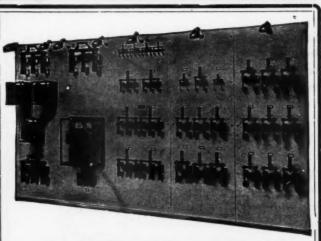
Write for free trial and our new price list.

THE MERCURY TIME SWITCH Co.

103 W. Atwaters Street, Detroit, Michigan

Eastern Representatives.

MANUFACTURERS DISTRIBUTING CO., 291 Broadway, New York, N. Y.



WURDACK

SWITCHBOARDS

PANEL BOARDS

STEEL CABINETS

KNIFE SWITCHES

LET US

FIGURE

YOUR

REQUIREMENTS.

WM. WURDACK ELECTRIC MFG. COMPANY

ST. LOUIS, MO.

Cartridge Space Sp

White lines direct attention to principalfeatures of the T-C, many of them exclusively @ superiorities.

A Preferred Panelboard for both price and quality

Don't buy cheap panelboards; it is expensive and unnecessary, as the new Triumph Type T-C (tumbler-switch, cartridge-fuse) gives you the highest quality at the lowest price. This is possible because the T-C is a machine-made, sectionally constructed panelboard, that costs less to manufacture. There is a Triumph Type for every purpose.

Write for the new @ Panelboard Catalog, just off the press.

Detroit Chicago Philadelphia
Pittiburgh Cincinnati Denver
Indianapolis Seattle Dallas
Minneapolis New York

Kansas City
New Orleans
San Francisco
Los Angeles

To Help You Employ Profitably the Current Year—

Every Business Must Operate on a Definite Plan!

The Electragist Who Shows a Real Profit at the End of the Year Does Not Get It by Floating Idly Down Stream!

AVE you carefully planned your sales campaign for 1924? Or are you going to run the business to which your are devoting your time, capital and energy, much as the ship without charts or pilot? Now, is the time to answer this question!

The Society for Electrical Development is a firm believer in the value of PLANS for all kinds of sales and advertising activities. Thousands of progressive concerns and individuals have used S. E. D. sales plans and material and have reported most gratifying results.

Now, it has created a Year's Sales Program for you! This program specifies Sales Activities for the whole of 1924. You can utilize these plans, in whole or in part, according to your local requirements.

S. E. D. Sales Campaigns and Material are complete in every detail. They will help you build more and better business every month in the coming year. Massed production and national contact and study of all progressive industrial moves put this coöperative organization in position to render most valuable service to Electragists.



If you are a member of the S. E. D. you will receive a copy of this very valuable Sales Plan Book; if you are NOT a member, it will pay you to learn of the reduced-cost membership plan in effect between the Association of Electragists—International, and the Society for Electrical Development, Inc.



Start 1924 Right-

FILL OUT THIS COUPON AND SEND IT TO US TODAY!

Association of the Electragists, (International) 15 West 37th Street, New York, N. Y. Gentlemen:

I am interested in learning full details about the joint-membership plan with The Society for Electrical Development, Inc., and the extremely low rates prevailing for ELECTRAGISTS.

Individual _____ Company _____ State _____



Sell the

Simplex Sunbowl Heater

and be assured of a satisfied customer.

If your stock is not complete, order now.

THE PHILADELPHIA ELECTRIC COMPANY SUPPLY DEPT. 130-132 South Eleventh Street Philadelphia

Permanent Construction

-versus-

Temporary Makeshifts

Seven Sizes

Pipe Measure



Three-eighths to Two and one-half inches

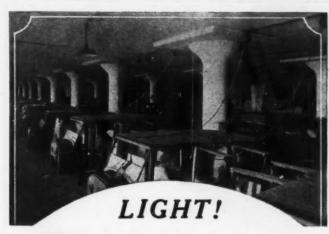
Makeshifts in construction are the cause of frequent repairs and changes. Where it is possible—permanent work proves more economical in the long run.

Minerallac Cable and Conduit Hangers are intended for use on open wiring where cable or conduit must be compactly arranged and also present a neat appearance. Safety and lasting quality is their reputation.

Your Jobber Has Them

MINERALLAC FLECTRIC COMPANY

1045 Washington Blv'd, Chicago





Portable Reelite with heavy wire guard and key socket. Made in several sizes, holding from 12 to 125 feet of cord.

When and Where You Want It and Out of the Way When You Don't Want It.

There are thousands of manufacturing operations where a specialized light is needed at intermittent intervals, and there is a Reelite adapted to every one of

How efficiently the Reelite takes care of the auto upholsterers' needs is shown in the above interior view of the upholstering department of the Towson Body Company, Detroit, Michigan.

Reelites keep the cords always out of the way—clean and unkinked—facilitat-ing the movements of the car bodies and trucks—freeing the aisles of the snares that cause accidents and retard produc-tion. The lights are instantly available— within arm's reach—no time lost un-tangling cords or making extensions.

When once installed Reclites soon pay for themselves in convenience, reduced cost of cord maintenance, increased production and elimination of accidents

Tell us about your lighting problems. Our engineers will solve them for you.

Write for Reelite Folder 314-D.

Appleton also manufactures "Unilets," flexible conduit, and other electrical fittings. Ask for Catalogue 9.

APPLETON ELECTRIC COMPANY

1704 Wellington Avenue CHICAGO

Mr. A. I. Appleton, President of Appleton Electric Company, is not in any way, directly or indirectly, interested in any other company manufacturing electrical specialties or supplies and has never authorized the use of his name in this connection.





"CENTRAL"

RIGID STEEL

CONDUIT

WE have what every electragist wants
—a first-class product; guaranteed
as to quality and to give maximum protection.



"Central White" Conduit may be bent like a piece of soft annealed wire. The pipe and finish remain unimpaired—features exclusively "Central."

"Central White"_____galvanized
"Central Black"____enameled

CENTRAL TUBE CO. PITTSBURGH, PA.

Rubber Insulated Wires and Cables



National Electrical Code Standard Intermediate (Red) Thirty Per Cent

Wire built under the direct supervision of experienced engineers, skillfully and honestly manufactured with one purpose and result.

Continuous Service

A-A WIRE CO., Inc.
FACTORY: NEWARK, N. J.
Sales Offices: 110 East 42nd Street,
New York City

We Manufacture:-

Rubber Covered Wire—Solid Conductor, Stranded Conductor, Flexible Conductor. Extra Flexible Conductor.

Lamp Cords, Reinforced Cords, Heater Cord, Brewery Cord, Canvasite Cord, Packinghouse Cord.

Deck Cable, Stage Cable, Border Light Cable, Flexible Armored Cable.

Elevator Lighting Cable, Elevator Operating Cable, Elevator Annunciator Cable.

Switchboard Cables, Telephone Wire, Flameproof Wires and Cables, Railway Signal Wires, High Voltage Wires and Cables.

Automobile Ignition Cables, Automobile Lighting Cables, Automobile Starting Cables, Automobile Charging Cables.

Moving Picture Machine Cable.

Boston Insulated Wire & Cable Co.

Main Office and Factory: Dorchester District Boston, Mass.

> Canadian Branch Office and Factory: Hamilton, Ont.



Eventually you will add this staple, fast selling article to your stock as the contractors will not be without these time and money saving strips. No doubt many of your customers are using them now. Have your salesmen investigate and see if this is not true.

CONTRACTORS AND DEALERS!

Kruse Strips are made of sheet metal, so they may be cut the desired length with your snips. Made 18" long. A hammer, four nails and three minutes' time is all you need to install a box or a gang of them.



A card will bring a sample set, or \$1.00 will bring twelve (12) sets by prepaid parcel post.

MIDWEST METAL PRODUCTS COMPANY

Munice, Indiana

BARD-PARKER Wire Insulation Stripper



CAN STRIP 1200 ENDS AN HOUR

No. 1 TOOL

Regularly Equipped with 3 hole blades for size No. 11 and smaller. Interchangeable single hole blades for any special size desired also supplied when specified.

Write for particulars.

\$5.00 F.O.B.

NEW YORK

BARD-PARKER COMPANY, Inc. 150 Lafayette St., New York City

INSURANCE AT COST

Liability and Automobile

In 1915 the Insurance Committee of the A.E.I. investigated and recommended this insurance organization to the membership of the Association.

All through the eight years that have passed since 1915 the relations thus established have been closely maintained until Lynton T. Block & Company is known to every Electragist.

The advantages, both in Protection, Service and Savings, that are afforded through the Merit Saving Plan of Insurance are well worth consideration by every member, as they have the unqualified endorsement of the Insurance Committee of the A.E.I. year after year.

Remember, this is one of the benefits of membership.

For complete information address

LYNTON T. BLOCK & CO.,

Underwriters of Special Class Insurance at Cost ST. LOUIS, MO.

BUYER'S GUIDE

of some of the products manufactured by the concerns advertising in this issue. To be listed here is a badge of reliability. To buy from here is a guarantee of satisfaction. When you buy from here please mention

THE ELECTRAGIST

ADAPTERS, LAMP Arrow Electric Co. Bryant Electric Co. Conn. Elec. Míg. Co. General Electric Co. Hubbell, Inc., Harvey

ALARMS, BURGLAR, FIRE Conn. Telephone & Elec. Co. Ostrander & Co. Partrick & Wilkins Co. Stanley & Patterson. Western Electric Co.

AMMETERS
Norton Elec'l. Instrument Co.

ANNUNCIATORS
Ansonia Electric Co.
Conn. Telephone & Elec. Co.
Ostrander & Co., W. R.
Partrick & Wilkins Co.
Stanley & Patterson.

ARRESTERS, LIGHTNING General Electric Co. Westinghouse Elec. & Míg. Co.

ASBESTOS WOOD Johns-Manville, Inc.

ATTACHMENTS, SOCKET Arrow Electric Co. Hubbell, Inc., Harvey

BATTERIES, DRY Stanley & Patterson

BATTERY CHARGING OUTFITS Westinghouse Elec. & Mig. Co.

BELLS, ELECTRIC
Ansonia Electric Co.
Connecticut Tel. & Elec. Co.
Ostrander & Co., W. R.
Partrick & Wilkins Co.
Schwarze Elec. Co.
Stanley & Patterson.

BENDERS, CONDUIT Steel City Electric Co. Thomas & Betts Co.

BLOCKS, MOLDING Bryant Electric Co. Roberts Elec. Sup. Co., H. C.

BOLTS, TOGGLE
National Metal Molding Co.
Thomas & Betts Co.
Westinghouse Elec. & Míg. Co.

BOXES, CONDUIT
Appleton Electric Co.
Chicago Fuse Mfg. Co.
Hart Mfg. Co.
National Metal Molding Co.
Sprague Conduit Works
Steel City Electric Co.
Thomas & Betts Co.
Westinghouse Elec. & Mfg. Co.

BOXES, FLOOR
Frank Adam Electric Co.
Sprague Conduit Works.
Stanley & Patterson.
Steel City Electric Co.
Thomas & Betts Co.
Westinghouse Elec. & Míg. Co.

BOXES, MANHOLE (JUNCTION) Frank Adam Electric Co. General Electric Co. Johns-Pratt Co.

BOXES, METER PROTECTING General Electric Co. Westinghouse Elec. & Míg. Co.

BOXES, PULL Westinghouse Elec. & Míg. Co. BOXES, WOOD OR CABINET Stanley & Patterson.

BRACKETS, TELEPHONE Stanley & Patterson. Western Electric Co.

BRUSHES
General Electric Co.
Westinghouse Elec. & Mig. Co.

BUSHINGS, BOX AND CABINET Fralick & Co., S. R. Pass & Seymour, Inc. Westinghouse Elec. & Míg. Co.

CABINETS, METAL
Frank Adam Electric Co.
Thomas & Betts Co.
Westinghouse Elec. & Míg. Co.
Wurdack Electric Co.

CABLE, ARMORED Eastern Tube & Tool Co.

CHARGING OUTFITS
General Electric Co.
Westinghouse Elec. & Mig. Co.

CIRCUIT BREAKERS, (Automatic)
General Electric Co.
Westinghouse Elec. & Mfg. Co.

CLAMPS, CABLE SUPPORTING Steel City Electric Co.

CLAMPS, GROUND CONNECTION
Fralick & Co., S. R.
General Electric Co.
Hart Mfg. Co.
Minerallac Electric Co.
National Metal Molding Co.
Sprague Conduit Works
Thomas & Betts Co.

CLAMP TEST
Appleton Electric Co.

CLEANERS, VACUUM

Apex Elec'l Distributing Co.
Western Electric Co.

CLIPS, FUSE
Bryant Electric Co.
Johns-Pratt Co.

COILS, CHOKE
General Electric Co.
Westinghouse Elec. & Mfg. Co.

COLORING AND FROSTING, IN-CANDESCENT LAMPS Philadelphia Electric Co.

CONCENTRIC WIRING FIT-TINGS General Electric Co.

CONDUCTORS, ARMORED Tubular Woven Fabric Co.

CONDENSERS, TELEPHONE
AND TELEGRAPH
Connecticut Tel. & Elec. Co.
Western Electric Co.

CONDUIT BOXES
Thomas & Betts Co.

CONDUIT, FLEXIBLE Eastern Tube & Tool Co.

CONDUIT, INTERIOR
Alphaduct Co.
American Circular Loom Co.
Central Tube Co.
Clifton Mfg. Co.
Enameled Metals Co.
Killark Electric Mfg. Co.
National Metal Molding Co.
Saylor Electric & Mfg. Co.
Sprague Conduit Works.
Steel City Electric Co.
Trumbull Electric Mfg. Co.
Tubular Woven Fabric Co.

CONDUITS, UNDERGROUND Johns-Manville, Inc.

CONNECTORS, BRASS
CYLINDER
Bryant Electric Co.
Trumbull Electric Co.

CONNECTORS, EXTENSION CORD Arrow Electric Co. Hubbell, Inc., Harvey

CONNECTORS, SLEEVE Bryant Electric Co. CONNECTORS, SOLDERLESS Dossert & Co. Westinghouse Elec. & Mfg. Co.

CONNECTORS, WIRE Conn. Elec. Míg. Co.

COOKING UTENSILS, ELECTRIC Westinghouse Elec. & Míg. Co.

CORDS, FLEXIBLE

Reben Elec. Mfg. & Supply Co.
Tubular Woven Fabric Co.
United States Rubber Company

CORDS, HEATER
United States Rubber Company

CORDS, LAMP United States Rubber Company

COUPLING, SHAFT General Electric Co.

CUTOUTS
Arrow Electric Co.
Bryant Electric Co.
Chicago Fuse Mfg. Co.
Conn. Elec. Mfg. Co.
General Electric Co.
Harvey Hubbell, Inc.
Johns-Pratt Co.
Pass & Seymour, Inc.
Trumbull Electric Mfg. Co.
Westinghouse Elec. & Mfg. Co.

DECORATIVE LIGHTING General Electric Co.

DYNAMOMETERS
Sprague Conduit Works.

EBONY ASBESTOS WOOD Johns-Manville, Inc.

FANS, A.C. AND D.C. Emerson Electric Mfg. Co. Western Electric Co. Westinghouse Elec. & Mfg. Co.

FANS, HANGERS Adam Electric Co., Frank

FANS, MOTOR
Emerson Electric Mfg. Co.
General Electric Co.
Sprague Electric Works
Western Electric Co.
Westinghouse Elec. & Mfg. Co.

FARM LIGHTING GENERATORS Westinghouse Elec. & Mfg. Co.

FITTINGS, FIXTURE, IRON
Appleton Electric Co.
Bryant Elec. Co.
Fralick & Co., S. R.
General Electric Mfg. Co.
Killark Electric Mfg. Co.
National Metal Molding Co.
Sprague Conduit Works.
Steel City Electric Co.
Thomas & Betts Co.
Trumbull Electric Mfg. Co.
Vandy, B. A.
Westinghouse Elec. & Mfg. Co.

FIXTURE STUDS
Fralick & Co., S. R.
Thomas & Betts Co.

FURNACES, ELECTRIC General Electric Co. Westinghouse Elec. & Míg. Co.

FUSES, ENCLOSED
Bryant Electric Co.
Chicago Fuse & Míg. Co.
General Electric Co.
Johns-Pratt Co.
Westinghouse Elec. & Míg. Co.

FUSES, OPEN LINK
Chicago Fuse & Mig. Co.
General Electric Co.
Westinghouse Elec. & Mig. Co.

FUSES, TELEPHONE Chicago Fuse & Mig. Co. Western Electric Co. GENERATORS, LIGHT AND POWER
Emerson Electric Mfg. Co.
General Electric Co.
Sprague Conduit Works.
Westinghouse Elec. & Mfg. Co.

GUARDS, LAMP Hubbell, Inc., Harvey

HANGERS, ARC LAMP General Electric Co. Wakefield Brass Co., F. W. Westinghouse Elec. & Míg. Co.

HANGERS, CONDUIT and CABLE Appleton Electric Co. Minerallac Electric Co. Steel City Elec. Co. Thomas & Betts Co.

HANGERS, FIXTURE and BOX Westinghouse Elec. & Mfg. Co.

HANGERS, LAMP Bryant Electric Co.

HEATERS, LIQUID
General Electric Co.
Westinghouse Elec. & Mfg. Co.

HEATING DEVICES
Commonwealth Edison Co.
Westinghouse Elec. & Mfg. Co.

HIGH TEMPERATURE CEMENTS
Johns-Manville, Inc.

HOLDERS, SHADE Arrow Electric Co. Hubbell, Inc., Harvey

HOLDERS, BATTERY Ostrander & Co., W. R. Stanley & Patterson

INSTRUMENTS, INDICATING General Electric Co. Westinghouse Elec. & Míg. Co.

INSTRUMENTS, LAMP TEST-ING General Electric Co.

INSTRUMENTS, MINIATURE SWITCHBOARD General Electric Co. Westinghouse Elec. & Míg. Co.

INSTRUMENT, POCKET Connecticut Tel. & Elec. Co.

INSTRUMENTS, RECORDING and CURVE DRAWING General Electric Co. Westinghouse Elec. & Mfg. Co.

INSTRUMENTS, TESTING General Electric Co. Westinghouse Elec. & Mfg. Co.

INSULATION, MOLDED Johns-Manville, Inc. Johns-Pratt Co. Westinghouse Elec. & Mfg. Co.

INSULATORS, CANOPY Arthur F. Stanley General Electric Co.

INSULATORS, HIGH VOLTAGE General Electric Co. Johns-Manville, Inc. Stanley, Arthur F. Westinghouse Elec. & Mfg. Co.

INSULATORS, TREE
Westinghouse Elec. & Mfg. Co.

IRONING MACHINES
Apex Elec'l. Distributing Co.

IRONS, CURLING
Westinghouse Elec. & Mfg. Co.

IRONS, SOLDERING General Electric Co.

JOINTS, CABLE
Dossert & Co.
Westinghouse Elec. & Mfg. Co.
LOINTS, FLYTING INSULATING

JOINTS, FIXTURE INSULATING Thomas & Betts Co.

LAMPS, ARC General Electric Co. Westinghouse Elec. & Mfg. Co.

LAMPS, AUTOMOBILE Connecticut Tel. & Elec. Co. LAMPS, INCANDESCENT Edison Lamp Works General Electric Co. Westinghouse Lamp Co.

Westinghouse Lamp Co.

LAMPS, PHOTO-ENGRAVINGGeneral Electric Co.

Armored Cable Flexible Steel Conduit





Quality Products

Write for our vestpocket telephone directory.

EASTERN TUBE & TOOL CO., Inc.

Brooklyn, N. Y.





We beg to announce that we are NOW in a position to supply

ENAMELED MAGNET WIRE

of the highest grade in sizes ranging from No. 7 to No. 38 B. & S. Ga. We would appreciate a trial order.

We also manufacture Weatherproof, Slow Burning, Annunciator, Office and Magnet Wires and Cables and Stranded Antenna Wire

ACME, EUREKA, AND WIZARD IRON AND WOOD BOX BELLS AND BUZZERS
Annunciators and Push Buttons "Daisy" Floor Treads

The Ansonia Electrical Company, Ansonia, "Conn., U. S. A.



NO MEASURING OR SAWING FOUR NAILS AND A HAMMER SETS THE BOX ALLOWING FOR LATH AND PLASTER.

ANY MAKE OF BOX CAN BE USED.

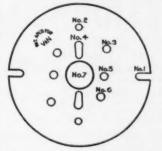
Our "ALL IN ONE" Covers are something new and saves carrying a variety of covers in stock.

HAVE VANDY EXPLAIN TO YOU WHY HIS FITTINGS COST YOU NOTHING.

OUR WAY is the BEST WAY
Manufactured By

B. A. VANDY

187 No. Water St. ROCHESTER, N. Y.



NEEDLE

ANNUNCIATORS

Hotel, House, Car Marine, Elevator

Self-Restoring Individual Set-Back

Return Call Systems Telephone Systems Fire Alarm Systems

Hospital Systems

Apartment House
Systems

Etc., Etc.

Annunciators and Electrical
House Goods

Manufactured by

PARTRICK & WILKINS CO.

Established 1867

51 N. Seventh Street,

Philadelphia

Our Annunciators and House Goods in Stock and for Sale by Dealers Everywhere



BUYER'S GUIDE—Continued.

LAMPS, TROUBLE, AUTOMO-BILE, PORTABLE, HAND Connecticut Tel. & Elec. Co. Stanley & Patterson.

LIGHTING FIXTURES
Curtis Lighting, Inc.
Frink, Inc., I. P.
Guth Co., Edwin F.
Shapiro & Aronson, Inc.
Wakefield Brass Co., F. W.
Western Electric Co.,
Westinghouse Elec. & Mig. Co.
Westinghouse Lamp Co.

LIGHTS, STAGE Sprague Conduit Works. Western Electric Co.

LOCKS, AUTOMOBILE Connecticut Tel. & Elec. Co.

LOCKNUTS Fralick & Co., S. R.

LUGS, TERMINAL

Dossert & Co.

Trumbull Electric Co.

Westinghouse Elec. & Míg. Co.

METAL PRODUCTS
Midwest Metal Prod. Co.

MOLDING, METALLIC Appleton Electric Co. National Metal Molding Co.

MOTOR GENERATORS
General Electric Co.
Sprague Conduit Works.
Westinghouse Elec. & Mfg. Co.

MOTORS, POWER

Emerson Electric Co.
General Electric Co.
Sprague Conduit Works.
Western Electric Co.
Westinghouse Elec. & Míg. Co.

OZONIZERS, INDUSTRIAL Sprague Electric Works

PADS, HEATING
Philadelphia Electric Co.
Westinghouse Elec. & Mig. Co.

PAINTS AND COMPOUNDS General Electric Co. Johns-Manville, Inc. Minerallac Electric Co. Standard Underground Cable Co. Westinghouse Elec. & Míg. Co.

PANEL BOARDS
Adam Electric Co., Frank
Johns-Manville, Inc.
Trumbull Electric Mfg. Co.
Westinghouse Elec. & Mfg. Co.

PERCOLATORS
Westinghouse Elec. & Mfg. Co.

PLANTS, LIGHTING General Electric Co. Western Electric Co. Westinghouse Elec. & Mfg. Co.

PLATES, FLUSH SWITCH Arrow Electric Co. Bryant Electric Co. Connecticut Tel. & Elec. Co. Hubbell, Inc., Harvey

PLUGS AND RECEPTACLES
Arrow Electric Co.
Bryant Electric Co.
Chicago Fuse Míg. Co.
Conn. Elec. Míg. Co.
General Electric Co.
Hubbell, Inc., Harvey
Johns-Manville, Inc.
Johns-Pratt Co.
National Metal Molding Co.
Pass & Seymour, Inc.
Sprague Conduit Works
Stanley & Patterson
Trumbull Electric Co.
Western Electric Co.
Westinghouse Elec. & Míg. Co.

PLUGS, SPARK Western Electric Co.

POLE LINE HARDWARE Johns-Manville, Inc. National Metal Molding Co. Westinghouse Elec. & Mfg. Co.

PORCELAIN, STANDARD General Electric Co. PORCELAIN PRODUCTS
Pass & Seymour, Inc.
Sears, Henry D.

POSTS, LAMP, ORNAMENTAL Westinghouse Elec. & Mfg. Co.

POTS, MELTING
General Electric Co.
Westinghouse Elec. & Míg. Co.

PROJECTORS, ELECTRIC
Curtis Lighting, Inc.
General Electric Co.
Western Electric Co.
Westinghouse Elec. & Mfg. Co.

PROTECTORS, LINEMEN'S Minerallac Electric Co.

PROTECTORS, THREAD, CON-DUIT Enameled Metals Co.

PROTECTORS

Connecticut Tel. & Elec. Co.
Minerallac Electric Co.
Partrick & Wilkins Co.
Stanley & Patterson

RADIATORS, ELECTRIC Westinghouse Elec. & Mig. Co.

RADIO APPARATUS
General Electric Co.
Ostrander & Co., W. R.
Philadelphia Elec. Co.
Stanley & Patterson
Trumbull Elec. Mfg. Co.
Westinghouse Elec. & Mfg. Co.

RANGES, ELECTRIC Westinghouse Elec. & Mig. Co.

REFLECTORS, PORCELAIN, EN-AMELED, IRON and STEEL Curtis Lighting, Inc. Hubbell, Inc., Harvey Westinghouse Elec. & Mfg. Co.

REGULATORS, VOLTAGE
General Electric Co.
Westinghouse Elec. & Míg. Co.

RHEOSTATS
General Electric Co.
Westinghouse Elec & Míg. Co.

ROSETTES
Arrow Electric Co.
Bryant Electric Co.
Conn. Elec. Mfg. Co.
General Electric Co.
Hubbell, Inc., Harvey
National Metal Molding Co.
Pass & Seymour, Inc.
Trumbull Electric Mfg. Co.

SAFETY PANELS Penn Elecl & Mfg. Co.

SHADES, METALLIC Hubbell, Inc., Harvey Ostrander & Co., W. R.

SIGNALS, FACTORY AND OFFICE Stanley & Patterson.

SIGNS, EXIT
Sprague Conduit Works.

Sprague Conduit Works.

SOCKETS AND RECEPTACLES
Appleton Electric Co.
Arrow Electric Co.
Conn. Elec. Míg. Co.
General Electric Co.
Hubbell, Inc., Harvey
Johns-Manville, Inc.
National Metal Molding Co.
Ostrander & Co., W. R.
Pass & Seymour, Inc.
Sears, H. D.
Stanley & Patterson
Trumbull Electric Co., Inc.
Westinghouse Elec. & Míg. Co.

SOLDERING COMPOUNDS Westinghouse Elec. & Mfg. Co.

STARTERS, MOTORS
General Electric Co.
Westinghouse Elec. & Mfg. Co.

STERILIZERS, WATER, ELECTRIC
Westinghouse Elec. & Míg. Co.

STRAPS AND CLAMPS, CON-DUIT Fralick & Co., S. R.

STOVES, DISC Westinghouse Elec. & Mig. Co.

SUPPLIES, ELECTRICAL
Adam Electric Co., Frank
Baltimore Elec'l Supply Co.
National Elec'l Supply Co.
Newark Elec'l Supply Co.
Ostrander & Co., W. R.
Philadelphia Electric Co.
Roberts Elec. Supply Co., H. C.
Rumsey Electric Co.
Southern Electric Co.
Stanley & Patterson.
Western Electric Co.

SWITCHBOARDS, LIGHT AND POWER

Adam Electric Co., Frank Bryant Electric Co. General Electric Co. Johns-Manville, Inc. Sprague Conduit Works. Trumbull Electric Mfg. Co. Westinghouse Elec. & Mfg. Co. Wurdack Electric Mfg. Co.

Wurdack Electric Mig. Co.
SWITCHES, BABY KNIFE
Bryant Electric Co.
General Electric Co.
Trumbull Electric Mig. Co.

SWITCHES, BATTERY
Hubbell, Inc., Harvey
Ostrander & Co., W. R.
Partrick & Wilkins Co.
Trumbull Electric Mfg. Co.

SWITCHES, DISCONNECTING General Electric Co. Westinghouse Elec. & Mfg. Co.

SWITCHES, FIXTURE Arrow Electric Co. Hubbell, Inc., Harvey Pass & Seymour, Inc.

SWITCHES, KNIFE
Adam Electric Co., Frank
Conn. Elec. Mig. Co.
General Electric Co.
Hart Mig. Co.
Trumbull Electric Mig. Co.
Westinghouse Elec. & Mig. Co.

SWITCHES, SAFETY
Adam Electric Co., Frank
Conn. Elec. Mfg. Co.
General Electric Co.
Johns-Pratt Co.
Trumbull Elec. Mfg. Co.
Westinghouse Elec. & Mfg. Co.

SWITCHES, SNAP
Arrow Electric Co.
Connecticut Tel. & Elec. Co.
General Electric Co.
Hart Míg. Co.
Hubbell, Inc., Harvey
National Metal Molding Co.
Pass & Seymour, Inc.
Trumbull Electric Míg. Co.

SWITCHES, TIME, AUTOMATIC General Electric Co. Mercury Time Switch Co.

SWITCHES, VOLTMETER
Adam Electric Co., Frank
Trumbull Electric Mfg. Co.
Westinghouse Elec. & Mfg. Co.

TAPE, INSULATING
General Electric Co.
Johns-Manville, Inc.
New York Insulated Wire Co.
United States Rubber Company
Westinghouse Elec. & Míg. Co.

TAPS, CURRENT Arrow Electric Co. Hubbell, Inc., Harvey

TELEPHONES
Connecticut Tel. & Elec. Co.
Stanley & Patterson
Western Electric Co.

TERMINALS, CABLE
Standard Underground Cable Co.

TERMINALS, TELEPHONE
Standard Underground Cable Co.
Western Electric Co.

TERMINALS, UNDERGROUND SERVICE Dossert & Co. TOASTERS
Westinghouse Elec. & Mig. Co.

TOOLS, BORING, ELECTRICIAN'S Stanley & Patterson. TOOLS, COMMUTATOR TRUING General Electric Co.

TOOLS, PORTABLE, HAND General Electric Co.

TRANSFORMERS
Connecticut Tel. & Elec. Co.
General Electric Co.
Westinghouse Elec. & Mfg. Co.

VOLTMETERS
Norton Elec'l. Instrument Co.

VULCANIZERS, ELECTRIC
Westinghouse Elec. & Mfg. Co.

WARMERS, FOOT AND RUG Westinghouse Elec. & Míg. Co.

WASHERS, CLOTHES
Western Electric Co.
Apex Elec'l. Distributing Co.

WASHERS, DISH Western Electric Co.

WELDING MACHINES, ELECTRIC
General Electric Co.
Westinghouse Elec. & Mfg. Co.

WIRE, ANNUNCIATOR AND
OFFICE
American Steel & Wire Co.
General Electric Co.
Standard Underground Cable Co.
United States Rubber Company

WIRE, ARMORED CABLE
Eastern Tube & Tool Co.
National Metal Molding Co.
Sprague Conduit Works

WIRE, AUTOMOBILE General Electric Co. Indiana Rubber & Ins. Wire Co. New York Insulated Wire Co. Safety Ins. Wire & Cable Co. United States Rubber Company

WIRE, BARE COPPER Standard Underground Cable Co.

WIRE, FUSE
Appleton Electric Co.
Chicago Fuse Míg. Co.
General Electric Co.
Westinghouse Elec. & Míg. Co.

WIRE, IRON American Steel & Wire Co.

WIRE, LEAD ENCASED
American Steel & Wire Co.
Atlantic Ins. Wire & Cable Co.
General Electric Co.
Indiana Rubber & Ins. Wire Co.
New York Insulated Wire Co.
Standard Underground Cable Co.
United States Rubber Company
Western Electric Co.

WIRE, MAGNET
American Steel & Wire Co.
Ansonia Electrical Co.
General Electric Co.
Standard Underground Cable Co.
Western Electric Co.

WIRE, RUBBER COVERED
A. A. Wire Co.
American Steel & Wire Co.
Atlantic Ins. Wire & Cable Co.
Boston Ins. Wire & Cable Co.
Detroit Insulated Wire Co.
General Electric Co.
Indiana Rubber & Ins. Wire Co.
New York Insulated Wire Co.
Standard Underground Cable Co.
Tubular Woven Fabric Co.
United States Rubber Company
Western Electric Co.

WIRE, TELEPHONE United States Rubber Company Western Electric Co.

WIRE, WEATHERPROOF American Steel & Wire Co. Ansonia Electrical Co. General Electric Co. United States Rubber Company Western Electric Co.

WIRELETS
Steel City Electric Co.

The Martin Portable

Vise Stand and Pipe Bender

Here is a handy helper for you. It's a staunch, high-grade vise stand and pipe bender—and MORE. It's PORTABLE. Carry it knocked down to any place you want to use it. It weighs only 50 lbs. Can be set up in a jiffy.



you'll appreciate this handy tool. It's unequalled for cut-ting, threading and bending pipe and conduit. Stands rigid without fastening. Write for full details and price.

H. P. Martin & Sons

804 W. 12th St. Owensboro, Ky.



IF you KNEW you could make a neat profit selling

AGER'S Soldering Paste-Salts;

That each is a fully guaranteed flux for use on all metals but aluminum,

Why Not Let Us Show You without obligation on your part by checking here for full particulars? Cut out and mail to:

Salts: Paste:

Alex, R. Benson Co., Inc.,

Hudson, N. Y.

For list of distributors see McRea's 1923 Blue Book.



ATLANTIC

Insulated Wires

Atlantic Insulation is notable for its dependability and maximum service.

DOLPHIN, Code; TRITON, Intermediate Grade 25% Para;

and NEPTUNE, 30% Para; are three widely known and extensively used Atlantic Wires.

If you want to build or hold a reputation for quality work, see that "Atlantic" goes in the job.

Price lists and discounts upon request.

ATLANTIC Insulated Wire & Cable COMPANY STAMFORD, CONN.





Standard or Cordless ypes. With or without letter box units.

Individual telephones for apartments, trades-

Ask for Catalogue 29-B Telephone Specialists for over 28 years.

CONNECTICUT PRESENTE COMPANY

ANDARD

Wires, Cables, Accessories

meet your every requirement of bare and insulated copper conductors, cable terminals, junction boxes, etc. Superior quality and prompt deliveries.

Standard Underground Cable Co.

Pittsburgh Detroit Kansas City

St. Louis Philadelphia Washington Chicago Los Angeles

Seattle Atlanta San Francisco



for interior wiring

All sizes and voltages. Thoroughly reliable. Safe. Underwriters' inspection and endorsement Illustrated catalogue-free.

American Steel & Wire

CHICAGO NEW YORK

Company



AMERICAN CIRCULAR LOOM CO.

90 West St., New York

Boston Chicago Los Angeles San Francisco

Seattle Toronto

Commonwealth Edison Company

Telephone Randolph 1280 38 North Market Street.

Dynamos. Motors. Transformers.
Arc Lamps and Appliances

High grade machine work of all kinds Correspondence Solicited-





The Contractor

wants a conduit with clean threads and smooth interiors so that he can install and fish it easily. And for the sake of his customer he wants a conduit protected from rust.

Clifton Conduit

Enameled or Galvanized.

is a practical conduit exactly suited to the contractor's needs. It is made from high-grade steel pipe carefully enameled or galvanized to protect it from corrosion. And the threads are sharp.

Clifton Manufacturing Co.

BOSTON, 61 Brookside Ave. 30
NEW YORK, 26 Cortlandt Street
BUFFALO, 34 Sayre Street
SAN FRANCISCO, 509 Mission Street
CHICAGO, 9 So. Clinton Street
Friction Tape. Splicing Compound.

"DETROIT" RUBBER COVERED WIRES

Rubber Insulated Wires and Cables

FOR EVERY ELECTRICAL PURPOSE
DETROIT INSULATED WIRE CO.
DETROIT, MICH.

UNIVERSAL ESTIMATE SHEETS

They Simplify Your Estimating

::::

Get a Supply from

ASSOCIATION OF ELECTRAGISTS

Formerly National Association of Electrical Contractors and Dealers.

15 West 37th St., New York



Buy Conduit Fittings by this

mark. They are better than others and cost no more.

S. R. FRALICK & COMPANY

15 SOUTH CLINTON STREET

CHICAGO

Every Thing from Generator to Lamp

H. C. ROBERTS ELECTRIC SUPPLY CO.

SYRACUSE, N. Y.
Cor. W. Water and N. Franklin Streets,
WASHINGTON, D. C.
806 Twelfth Street, N. W.

ELECTRICAL SUPPLIES



RADIO

PHILADELPHIA, PA. 1101-5 Race Street BALTIMORE, MD. 16 South Howard Street

AUTOMOTIVE EQUIPMENT



Ready? for the 1924 Fan Campaign

Westinghouse salesmen have yet visited you with samples of the 1924 Fan Campaign, you will not have long to wait. A personal interview with you is necessary because our plans are far too great to be presented in any other way.

The campaign idea which we have developed is built around certain positive qualities of the Westinghouse Fans, which give the dealers a substantial and visible foundation for the season's fan business.

Start now, with us, and keep one step ahead of your competitors. When our representative calls, hear what he has to say. It is worth while.

Westinghouse Electric & Manufacturing Company NEWARK WORKS, NEWARK, N. J.

Sales Offices in All Principal Cities of the United States and Foreign Countries.

Westinghouse

Westinghouse Appliances



House Furnishing Time is Here

Why not offer your customers some real house-furnishings?

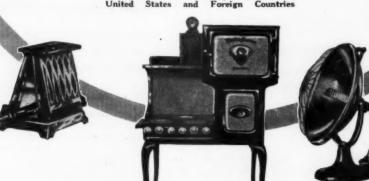
Consistent national advertising keeps the selling features of Westinghouse Appliances before the public. When you carry the Westinghouse line every advertisement in the Saturday Evening Post, Ladies' Home Journal, Good Housekeeping, Sunset and many other magazines of national distribution that we run becomes your ad, boosts your sales, and assures the success of your enterprise.

Electrical appliances are fast becoming indispensable parts of the home furnishings. Most women who are now using one or more of the Westinghouse household appliances hope to eventually own each and every one because they make housekeeping so much easier.

Get off for a timely start. Our local jobber is ready now, to assist you in every way.

Westinghouse Electric & Manufacturing Company
MANSFIELD WORKS,
MANSFIELD, OHIO

Sales Offices in All Principal Cities of the United States and Foreign Countries





Westinghouse



"How Much Will the Wiring Cost?"

That is almost the first question asked by every prospective buyer of industrial lighting equipment. And your answer is all important, because most dealers agree that high installation cost is the biggest barrier to industrial lighting sales.

The easy-to-wire feature of Westinghouse Pulley-Socket Reflectors enables you to satisfy the prospect on the cost question and still do the job without sacrificing any of your profit.

It takes but three minutes to wire a Westinghouse Pulley-Socket Reflector. They are up in a jiffy and up to stay. They are weather-proof, water-proof and rigid. They have interchangeable features enabling you to adapt the mode of light distribution to fit each particular job with the smallest number of stock parts.

These advantages will spell greater success for you in industrial lighting.

Get in touch with our nearest Jobber for full particulars.

Westinghouse Electric & Manufacturing Company

GEORGE CUTTER WORKS,

SOUTH BEND, INDIANA

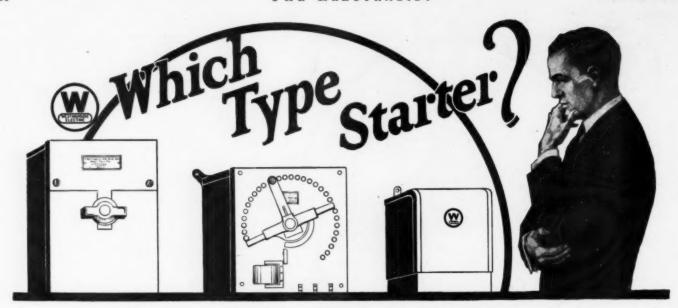
Sales Offices in All Principal Cities of the United States and Foreign Countries.



Bowl Type Reflector



Pulley Socket in Operation



The selection of the proper starting and controlling apparatus depends entirely upon the motor to be used. There are three general types of alternating current motors to be controlled:

- 1. Single Phase
- 2. Two or three phase (Squirrel-cage)
- 3. Two or three phase (Wound rotor)

I. SINGLE PHASE

Single phase motors do not always require starting apparatus, although good practice often dictates a starter to be used for protecting the motor against low voltage and overload, and also for protecting the customer's electrical service by regulating the starting current. This usage is also upheld in most localities by the central station and underwriters' rules.

To protect the motor there is the safety motor starter (WK-20), consisting of a quick-make and quick-break snap switch with thermal plug cutouts, all incased in a steel box. The cutouts protect the motor against serious over-load and the switch serves as a means of starting and stopping the motor.

To regulate the starting current there is a rheostat (Type DR) which provides low voltage protection. (This controller is used in most cases with repulsion induction motors above one horsepower).

II. TWO OR THREE PHASE (SQUIRREL-CAGE MOTOR)

The two or three phase safety switch similar to that mentioned above may be used on motors of this type up to five horsepower. Above five horsepower, it is often desirable upon starting to reduce the terminal voltage of the motor. Consequently, an auto starter (Type A) should be used. With the voltage ratios available in the transformer of this starter, the starting current can also be regulated to a particular value as desired or specified by the local power company. The adjustment is made by means of voltage taps on the transformer. On the smaller size starters there are two taps for securing 65 and 80 per cent. of full voltage. On the larger starter there are taps for 50, 65 and 80 per cent. of full voltage. The auto starter provides over-load and low voltage protection but is not considered a primary switch. An oil or ordinary knife switch is usually required to meet the underwriters' rule in conjunction with the auto starter.

III. TWO OR THREE PHASE (WOUND ROTOR)

Since the resistance of the rotor circuit of this type motor can be controlled externally, the motor is started by means of secondary control. A face plate starter (Type PF) is used where the motors full speed characteristics will adequately perform the duty required. Where speed control and heavy starting duty are encountered in non-reversing service, drum control (Type S or RF) is used. For reversing service, another type of control (Type FA) is required. These latter types of control are used together with sufficient grid resistance to allow the motor to perform the duty required of it. All this, however, is accomplished in the secondary or rotor circuit and as a result, overload protection must be secured in the primary circuit by the use of a motor safety switch (WK-20) with the smaller motors, and circuit breakers with the larger motors.

The above information is, more or less, a general outline of Westinghouse alternating current motor control. For particulars regarding each type, publications can be secured upon request from your nearest jobber or Westinghouse representative.

Westinghouse Electric & Manufacturing Company

Merchandising Section, East Pittsburgh, Pa.

Sales Offices in all the Principal Cities of the United States and Foreign Countries.

Westinghouse

Westinghouse



New Type WK-57 Universal Service Switch

This new service entrance device embodies all the principles of Safety, Convenience, and Economy. In a single, standardized unit it provides everything that may be had with a standardized Meter Service Switch.

The service side being under the control of the Utility, and the load side fuses under the control of the consumer, the latter is able to renew his fuses when blown out but unable to tamper with the load-side fuses, thus eliminating the danger of personal injury, and the fire hazard from over-fusing, which otherwise exists.

The cost of installation is very small since it is merely a matter of installing one compact unit. The arrangement of the testing facilities enable the testers to perform their work with speed, accuracy, and safety.

Westinghouse Universal Service Switches are produced for single-phase and direct current service in 30-ampere sizes. The switch has been passed by Underwriters under classification "A." Write to our nearest representative for additional information.

Westinghouse Electric & Manufacturing Company Mansfield Works, Mansfield, Ohio

Sales Offices in All Principal Cities of the United States and Foreign Countries



"Buy Electrical Supplies from Electrical Supply Johbers"

QUICK REFERENCE LIST for the Convenient Use of Contractor-Dealers, in which Electrical Supply
Jobbers in various Sections invite Your Patronage

SOUTHERN ELECTRIC CO.

Distributing Jobbers

Electrical and Radio Supplies Richmond BALTIMORE Norfolk

Distributors for General Electric Company, Radio Corporation of America, and other large and reputable manufacturers.

OVER Forty Years of Constant Observation and Study of Your Requirements in Electrical Supplies.

National Electrical Supply Company

1328-30 New York Ave.,

Washington, D. C.

More than 100,000 Square Feet of Floor Space.

Large Stock. Prompt Shipments.

QUALITY! SERVICE!

JOBBERS!

Over 250 jobbers are now selling Kruse Switch Box Supporting Strips and Lath Holders. Why? Because a large number of contractors and dealers have become wise to the fact that they can save a lot of time and money by their use and they are taking advantage of it.

tage of it.

Send \$1.00 for 10 sets to be delivered by prepaid parcel post

MIDWEST METAL PRODUCTS COMPANY
Muncie, Indiana.

Insulated Wire and Cable for every transmission purpose—not made to meet a price, but with the idea of rendering maximum service to the purchaser and of reflecting maximum credit to the contractor who uses it.

SAFETY INSULATED WIRE & CABLE CO.

114 Liberty Street,

New York City

For Service-

RUMSEY ELECTRIC COMPANY

1007 ARCH ST., PHILADELPHIA
Distributors

ELECTRIC SUPPLIES AND MACHINERY

SUBSCRIBE FOR THIS MAGAZINE TO-DAY AND RECEIVE THE REPORTS OF ASSOCIATION ACTIVITIES IN EVERY ISSUE

Published Monthly.

\$2.00 a Year.

THE ELECTRAGIST

15 West 37th Street.

New York City

LARGE STOCK

PROMPT SHIPMENT

Oldest and Largest Electrical Supply Jobbers in New Jersey

Newark Electrical Supply Co.

"The House of Quick Service"

223 Market Street

Newark, N. J.

RELIABLE dealers everywhere carry our annunciators and electrical house goods It will pay you to handle our line.

PARTRICK & WILKINS CO.,

51 North Seventh St.,

Philadelphia, Pa.

Our aim is to distribute only Quality Electric Products and we are always ready to serve your requirements.

THE PHILADELPHIA ELECTRIC COMPANY SUPPLY DEPARTMENT

130-132 So. Eleventh St., Philadelphia, Pa-

Deal with a jobber that has always recognized the electrical contractor and where you can depend upon

HIGHEST GRADE OF ELECTRICAL MATERIALS

Right Prices and Immediate Delivery

Baltimore Electrical Supply Co.

0

Where to Purchase Lighting Fixtures

READY REFERENCE LIST of Lighting Fixture Manufacturers for the convenience of Electrical Contractor-Dealers.

We would like to show you how easy it is to get the profits from the industrial lighting field and how easy it is to keep them coming your way. Write our nearest district office or direct.

WESTINGHOUSE ELECTRIC & MFG. CO.

GEORGE CUTTER WORKS,

SOUTH BEND, IND.



Shapiro & Aronson, Inc.

Lighting Fixture Manufacturers

Build your business with S. & A. Standardized Lighting Fixtures in Standardised Finishes. They com-bine the "made-to-order" look with prices rivaling those offered

on ordinary "ready-made" fixtures.

"Notice the Lighting Equipme

20 Warren Street,

New York City

NOVELTY OUTDOOR LIGHTING EQUIPMENT

-For-

Theatres, churches, office buildings, public buildings, apartments.

Write for Bulletin No. 40. It will show you our new designs.

NOVELTY LAMP & SHADE COMPANY

Department B T., CLEVELAND, OHIO 2488 EAST 22nd ST.,

I. P. FRINK

REFLECTORS

DESIGNERS AND MANUFACTURERS OF SCIENTIFIC AND ARTISTIC LIGHTING SPECIALTIES 24th Street and 10th Avenue, New York, N. Y.

Chicago, Ill., Monadnock Bldg. Boston, Mass., 161 Summer St.

Cleveland, Ohio, 336 The Arcade

San Francisco, Cal., Philadelphia, Pa., 77 O'Farrell St. Franklin Trust Bldg. Cincinnati, Ohio. Seattle, Wash., Louisville, Ky., 609 Seaboard Bldg. 415 W. Main St.

Intelligent supervision and infinite care give us confidence to say of Hygrade:

"YOU CANNOT BUY A BETTER LAMP."

HYGRADE LAMP CO.

General Office and Factory,

SALEM,

MASSACHUSETTS

EVERY TYPE AND STYLE OF LIGHTING FIXTURE

In addition to standard types, each a leader in its field, we are prepared to make any style or design of fixture that may be desired to meet any special or decorative requirement and our designing and engineering departments are at your service at any time—and without obligation—for such special work. Descriptive booklets showing the complete standard line will be gladly sent upon request.

THE EDWIN F. GUTH COMPANY St. Louis, Mo.

MORE SALES

----IF YOU SPECIFY----

X-Ray Reflectors

Show Window Lighting

NATIONAL X-RAY REFLECTOR COMPANY

NEW YORK

SAN FRANCISCO

There are hundreds of opportunities for the installation of Beardslee lighting fixtures in private houses, apartment houses, offices, banks, factories, hospitals, schools and other institutions right in your own city.

WRITE FOR CATALOGS AND SALES HELPS.

Beardslee Chandelier Mfg. Co.

231 So. Jefferson Street,

Chicago, Ill.

You SHOULD Use

Universal Estimate Sheets

They Simplify Your Estimating Supplied By

ASSOCIATION OF ELECTRAGISTS INTERNATIONAL

Formerly National Association of Electrical Contractors and Dealers.

15 West 37th Street,

New York

A complete line of Adjustable Electric Brackets, Portables and Metal Shades VERDELITE PORTABLES Catalog No. 27.

Prompt shipments from a complete stock of Original, Artistic and Economical Fixture Trimmings, Gas Electric and

Combination Brass Fittings, Stampings, Spinnings, Castings and Parts for Fixture Manufacturers and Dealers. Catalog No. 26. FARIES MANUFACTURING COMPANY

TABLE OF CONTENTS

	Page
Power of Concerted Thinking	14
Personal Views of the Editor	14
Do It Electrically	16
Service in Radio Retailing	19
The Radio Engineer-Dealer	20
Business and Recreation at 1924	A. E. I.
Convention	21
Determining Profit or Loss	22
How to Sell and Install Power	
New House Wiring Manual	29
Developments in Merchandising_	31

	Page
Don't Wait for Radio Perfection	32
Review of Radio Progress in 1923	33
Living Up to Code Requirements	37
Chats on the Code	38
Local Code Committees	39
What You Owe to Your Profession.	40
Organization Activities	41
List of Local Secretaries	
Wisconsin State Meeting	
Lehigh Valley Meeting	
Eastern Division Convention	

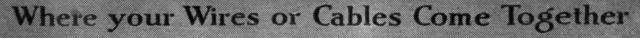
	Page
Carolina State Association	
New York Elections	
Toronto New Year Plans	
Philadelphia Festivities	
Market Was Interesting	
Denver Successes	
Baton Rouge Electric Show	
Providence Toast Campaign	
News Notes	
nufacturing	58
F I Officers and Committeemen	GA

ADVERTISING INDEX

Page	Page	Page
A	G .	0
A. A. Wire Co 70	General Electric CoInsert: 9-13	Ostrander & Co., W. R 65
Adam Electric Co., Frank		
Alpl-aduct Co 61		P
American Circular Loom Co	. н	Pass & Seymour, IncInsert: 53
American Steel and Wire Co 75	Hart Manufacturing Co 57	Partrick & Wilkins Co73
Ansonia Electrical Co	Harvey Hubbell, Inc 7	Philadelphia Electric Co., Supply Dept 69
Apex Elec'l. Distributing Co 55		Printed FormsInsert: 54
Appleton Electric Co 69		
Arrow Electric Co 49		
Atlantic Insulated Wire & Cable Co 75	1	R
	Indiana Rubber & Insulated Wire Co 63	Roberts Elec. Supply Co., H. C
В		Rumsey Electric Co.
Bard-Parker Co., Inc		
Benson Co., Inc., Alex R		S
Block & Co., Lynton T	1	Saiety Insulated Wire & Cable Co
Boston Insulated Wire & Cable Co	Jobbers' Quick Reference82	Saylor Elec'l Mfg. Co
Bryant Electric Co		Schwarze Electric Co
Buyers' Guide72, 74	Johns Trace Company	Sears, Henry D 4
		Shapiro & Aronson, Inc 83
		Society for Electrical Development
	. К	Southern Electric Co 82
С	Killark Electric Mfg. Co 70	Standard Accounting System
Central Tube Co		Standard Underground Cable Co 75
Chicago Fuse Manufacturing Co		Stanley, Arthur F 59
Clinton Manufacturing Co 76		Stanley & PattersonSecond Cover
Commonwealth Edison Co	Tinking Pink Police Police	Steel City Electric Co
Connecticut Tel. & Elec. Co		
Conn. Elec. Mfg. CoInsert following Page 4		т
Curtis Lighting, Inc		Thomas & Betts Co
	M	Tork CompanyFront Cover
D	Market Place 65	Trumbull Electric Mfg. Co 6
Detroit Insulated Wire Co 76		Tubular Woven Fabric Co 86
Dossert & Co	Martin & Sons, H. P 75	
	Mercury Time Switch Co67	u
	Midwest Metal Product Co 71	-
E	Mutual Elec. and Machine CoBack Cover	U. S. Rubber Co 1
Eastern Tube and Tool Co		V
Executive Committee 64		Vandy, B. A
Emerson Electric Manufacturing Co 3	N	
Enameled Metals Co		w
	National Metal Molding CoThird Cover	Western Electric Co 8
F	Newark Electrical Supply Co82	Westinghouse Elec. & Mfg. Co
Fralick & Co., S. R	New York Insulated Wire Co	Wurdack Electric Mfg. Co., Wm

NEW-

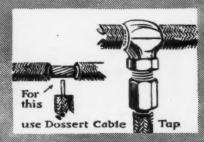
A complete revised catalog just off the press A three color wall card as illustrated below

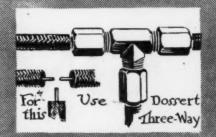


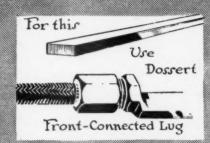
CONNECT EM WITH

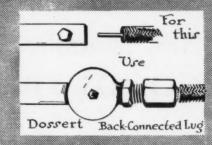
1) 055 ERLS THE TAPERED SLEEVE SOLDERLESS CONNECTORS



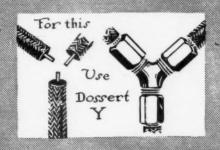


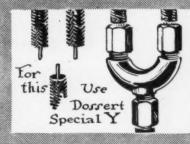




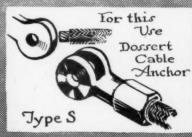
















SEND FOR CATALOGUE TWENTY. DOSSERT & CO., 242 WEST 415 ST. NEW YORK

Copyright, 1923, Dossert & Company.

To Dossert & Co.,

242 West 41st St., New York City.

Please send new colored wallhanger and new catalog to the address below.

Name____

Address

Company____

DURADUCT is the original

SINGLE WALL

Reg. U. S. Pat. Office

Non Metallic CONDUIT

Ask for it by name DURADUCT

Made by the
TUBULAR WOVEN FABRIC CO.
PAWTUCKET, R. I.
Makers of Durabilt Products



ing process anneals it to a degree that makes Sherarduct the conduit that may be "cold bent" right on the job—with

And the heavy, pure zinc coating which is made a part of the pipe will not crack or peel off at the bends, no matter how small the radius.

Over the Sherardized surface is a baked-on coat of acid proof enamel-added protection against corrosion.

Besides its easy bending qualities Sherarduct has a smooth, glass-like interior that makes fishing of wires easy.

National Metal Molding Company

WORLD'S LARGEST PRODUCERS OF ELECTRICAL CONDUITS AND FITTINGS

1053 Fulton Building, Pittsburgh, Pa.

A small Sherardized cop-per disc, ground down in center to show alloying of the zinc with the copper will be sent free to Archi-tects and electrical engi-neers on request.

Represented in all principal cities The Rigid Conduit That Bends





BullDog Safety Switches

Have "You Seen"
Our JUNIOR
SWITCH?

Built on less rugged lines than the "Bull Dog"—the JUNIOR meets the price demand for a high grade enclosed switch for use where severe service conditions do not exist.

Enclosed — Externally operated—QUICK MAKE—QUICK BREAK—High grade construction—and low price, in a lighter Safety Switch.

May we send you one on approval?

The "Bull Dog" Safety Switch is SAFE—POSITIVE QUICK MAKE as well as QUICK BREAK. The switch CANNOT be accidentally operated. The play provided in the operating handle, and the effort required to compress the QUICK MAKE spring, necessitate deliberate pressure to close the switch.

Investigate the "Bull Dog" carefully—compare it point by point with any other switch on the market. Your own technical knowledge will convince you that here is the switch you are looking for—a switch which meets every requirement of safety, dependability and satisfactory operation. On request we will gladly send a switch for your inspection.

BULEDOG MUTUAL ELECTRIC & MACHINE CO. DETROIT MICH. U.S.A.

